



ANNUAL REPORT
UPON THE
HEALTHINESS OF THE
CITIZENS,
AND UPON THE
SANITARY CONDITION
OF THE
CITY AND COUNTY
OF
NORWICH
FOR THE YEAR
1909.

BY
H. C. PATTIN, D.M., M.A., B.C. (Cantab), D.P.H.

PHYSICIAN TO THE CORPORATION HOSPITALS,
PRESIDENT OF THE SOCIETY OF MEDICAL OFFICERS OF HEALTH
EX-PRESIDENT NORWICH MEDICO-CHIRURGICAL SOCIETY,
MAJOR À LA SUITE S.S., R.A.M.C., T.F.,
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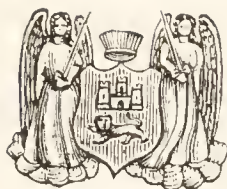
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CITY OF NORWICH.

HEALTH COMMITTEE.

The Lord Mayor :

E. E. BLYTH, ESQ., LL.D.

Chairman :

MR. ALDERMAN MORSE, J.P.

Vice-Chairman :

MR. COUNCILLOR CROTCH, J.P.

Members :

MR. COUN. BASSINGTHWAIGHTE	MR. COUN. ODHAMS, M.D., J.P.
„ „ CADMAN	„ „ PYKE
„ „ DARRELL, M.D.	„ „ ROBINSON, J.P.
„ „ LEMON	„ „ RUDD
„ „ MURRELL	„ „ SHORTEN.

PREFACE.



TO THE CHAIRMAN AND MEMBERS OF THE NORWICH URBAN SANITARY AUTHORITY.

GENTLEMEN,

By a General Order of the Local Government Board, dated 23rd March, 1891, it is prescribed that every Medical Officer of Health shall :—

Make an Annual Report to the Sanitary Authority up to the end of December in each year, comprising a summary of the action taken, or which he has advised the Sanitary Authority to take, during the year for preventing the spread of disease, and an account of the sanitary state of his district generally at the end of the year.

“ The Report shall also contain an account of the enquiries which he has made as to the conditions injurious to health existing in the district, and of the proceedings in which he has taken part, or advised under any statute, so far as such proceedings relate to these conditions.

“ Also an account of the supervision exercised by him, or on his advice, for sanitary purposes over places and houses that the Sanitary Authority have power to regulate, with the nature and results of any proceedings which may have been so required and taken in respect of the same during the year.

“ The Report shall also record the action taken by him, or on his advice, during the year in regard to offensive trades, to dairies, cow-sheds, and milk shops, and to factories and workshops.

"The Report shall also contain tabular statements of the sickness and mortality within the district, classified according to diseases and localities," etc., etc.

The report is made in fulfilment of the above regulations.

The *birth-rate* for the year, 24·2 per 1000 of the population at all ages, is lower than it was in the preceding year, as is the average birth-rate in the 76 great towns, which is 25·7 per 1000 births. The fall in our own case is in the proportion of 1·0 per 1000 of the population at all ages, and in the great towns it is 1·3. This steady fall in the birth-rate is a matter of national importance, and is a source of great disquietude to those who like to think that the determination of certain prospective developments of that process, of continuous adaptation to continuously altering surroundings, which we call "civilisation" should be the prerogative of the British race. In our own city 92 more of male than of female children were born. There were born 156 children known to be illegitimate—one more than in 1908—and the mortality rate for these unfortunate infants was, as usual, much higher than that for the legitimate born, the special death-rate among the illegitimates being 205 per 1000 births, whereas the special death-rate among the legitimates was only 108. In other words, the chances of surviving one year, for the illegitimate infants, are only about half as good as those of their legitimate compeers. There is unquestionably a deplorable, and one cannot help thinking a largely preventible, leakage of life here; a leakage that would be even more pronounced were it not for the efforts made by the Health Visitors and by some voluntary workers who make the oversight and care of illegitimate infants their special form of social service. Against what adverse influences they have to contend the figures sufficiently attest.

The *gross recorded death-rate*, 14·0 per 1000 (the deaths of non-residents are included), is lower than that for the 76 great towns considered together, viz., 14·6 per 1000. The *corrected death-rate* is 13·3. The *comparative mortality figure* is 898 (see section headed Demographical Statistics). In 1908 our gross death-rate was the

same, 14·0 per 1000, and that for the 76 great towns 14·9. The average Norwich death-rate for the preceding five years has been 16·0 per 1000.

The *zymotic death-rate* for the year is 1·5 per 1000. In 1908 it was 1·1. The difference is due to exceptional mortality from measles. The corresponding rates in the 76 great towns are 1·4 and 1·5 per 1000.

The *infantile mortality rate*, 119·0 per 1000 births is, taking into consideration the exceptional loss of 20 of the infants from measles, a satisfactory one. The corresponding rate in the 76 great towns is 120·25 per 1000 births. In 1908 these rates were 115·25 and 128·75 respectively; so that whilst still below the average for the 76 great towns our rate this year (owing to measles) has risen 3·75 per 1000, whereas the rate for the great towns has fallen 8·5 per 1000 births. But for the deaths from measles our rate would have been 110·8 per 1000 births. A cause contributory to the relatively low infantile mortality rate undoubtedly was the relatively cold summer, but there is little doubt that the main causes contributing to the result are the visitation of the homes, and the instruction given there by the health visitors, and the invaluable assistance readily given by the Sick Poor Society, to badly nourished mothers of newly born infants, upon my recommendation. Of the generosity shown by this Society, I cannot speak too warmly, particularly as this Society puts a severe strain upon its resources to provide milk, usually never less than one pint a day and sometimes more, for periods varying from two to five weeks. Nor is its aid in this direction limited to cases recommended from the Public Health Department. Its visitors constantly aid cases coming independently to their notice. During the year 397 newly confined mothers were commended to the Society by me, and 382 or more than 96 per cent. of these were given assistance. The Sick Poor Society is prevented by the terms of its constitution from giving milk to under nourished expectant mothers, so to tide these over a trying interval, I have had the assistance of the Charity Organisation Society in obtaining some

nutriment for them. Usually the Charity Organisation Society has secured the provision of some dinners. Out of thirty cases (several of which, for various and to it, quite valid reasons, the Charity Organisation Society could not see its way to help) sent in, 17 (56 per cent.) were helped in the manner indicated. This sort of help, *i.e.*, the provision of some meals, is of the greatest value to badly nourished expectant mothers, and I hope to find it extended and systematized as time goes on. It is to be remembered that help so given benefits not only the immediate recipient but also the prospective citizen, and incidentally the State, whose greatest wealth is human health.

As I pointed out last year, the inference to be drawn from the influence of relatively low climatal temperature in checking degenerative and putrefactive changes in milk, is the advantage to be derived from keeping milk, and more particularly milk intended for the food of infants at a low temperature—especially in hot weather. If such milk were kept in a clean bottle, corked or stoppered, or other suitable vessel, and that bottle or receptacle were kept immersed in cold water (failing ice), contact with flies could be prevented, dust excluded, and detrimental changes lessened and checked if not altogether stayed. Whilst as compared with the past an infantile mortality rate (inclusive of the deaths due to measles) of 119 per 1000 births is encouraging and a stimulus to increased efforts, I must point out that this rate, amounting as it does approximately to the loss of one child in every nine born, remains an uncomfortable item in our budget of lethalties. Some of the factors which contribute to this result cannot properly be set out here, but the more obvious are badly eminent in the special table devoted to infantile mortality of page 28-29. I invite special attention to the deaths attributed to “premature birth,” “debility” and “congenital defects” because these suggest antecedent conditions unfavourable to the child, and affecting its nutrition and viability, through its mother, prior to its birth. I claim consideration of these influences because well-meaning philanthropists so commonly assume that infantile mortality is due

almost entirely to imperfect or improper feeding of the child. Infantile mortality cannot be dissociated from *pre-natal* causes, and must not be regarded as due solely to *post-natal* influences. A proportion of the parents are naturally of debilitated constitution—some are intemperate drinkers, some are underfed, some not so much under as unwisely or intemperately fed. Again, some mothers induce in themselves undesirable conditions of debility by working too hard during the latter stages of pregnancy, or by bearing children too rapidly to admit of systematic recuperation, etc. In short, we have carefully to allow for, and rightly to estimate the antecedents to death, and it is in respect of these that *ante-natal* influences become important if we would realize the inherent sagacity of Burke's definition of a community, *viz.*, that it is "a partnership not only between those who are living, but between those who are living and those who are dead, and those who are to be born."

The *Notification of Births Act* has been in force in the City for two years, and through its operation the Public Health Department received direct information of two-thirds of the births in the City. A third is a regrettably large number to remain unnotified, and if the proportion tend to heighten it may be necessary to take steps to penalize defaulters. But for the main purpose for which the practical sanitarian values the Act I am well satisfied with its fulfilment in Norwich, *viz.*, giving us information of births where no medical man is in attendance. I do not, in practice, concern myself greatly over the non-notification of a birth when a doctor is in attendance. I learn of its occurrence later from the returns sent in to the Registrars, and moreover I feel strongly that the medical profession was treated with even more than the usual lack of generosity which characterizes Parliamentary dealings with it when the statute was passed. The Act has been, is, and will be of the greatest utility in giving us early information of births, and more especially where no doctor is called in; the prompt call made by the Health Visitor at the dwelling enables us to give advice as

to the feeding and care of newly-born infants, etc. It is by means of these visits that I obtain knowledge of badly-nourished mothers, and am enabled to recommend them to the Sick Poor Society, and so to secure for them its generous and most public-spirited assistance. Moreover the call of the Health Visitor personifies the interest which our community, our civic family, takes in the welfare of the most helpless of its members, and, exhibited with tact and discretion, this interest becomes of real help and encouragement to the well-meaning parents, and a reproof, reproach, and restraint to the civically indifferent and the reprehensibly careless. It is by means of these services, aided by a constant, if but very gradual, heightening of the general level of communal intelligence, that we justifiably may expect to alter some unsatisfactory features in the racial attitude toward the obligations of parentage, and to substitute for well-meaning ignorance, and an ethically demoralizing disinclination to take trouble, a civic "Bushido," an active consciousness that rightly to rear up a future citizen is a racial duty entrusted to the parents, the effective discharge of which is one of the most patriotic services that can be rendered to the State. During the current year the Health Committee, on my recommendation, will pay for the notification of "Ophthalmia Neonatorum" among the newly-born. This is a dangerous eye affection due to specific infection, the neglect of which it is estimated has been responsible, in the past, for a very large percentage of our blindness. The value of prompt notification of birth, and the importance of rigidly enforcing this, especially where no doctor is in attendance, become obvious when it is remembered that in dealing with this affection promptitude is important. I am glad to say that I find a number of the doctors notifying births to me in preference to reminding the father to notify, because they find the call of the Health Visitor helpful in getting their own instructions more effectively carried out, and the home kept cleaner. By possessing one's soul in patience, I am pretty confident that, as time goes on, we shall find the number of doctors who do this increase, and indeed am not without hope that Parliament, when it is animated with a wiser economy, will award a fee for the service.

During the year the Health Visitors (who concurrently act as School Nurses), Misses Hatton, Steven, Ostle, and Duncan, paid 15,744 visits and revisits to houses, and found in them 1231 sick persons (306 of these latter being infants). 2687 of the visits were made in connection with the medical inspection of school children. They were instrumental in getting 94 houses and 567 persons cleansed—33 of the latter compulsorily under the Children Act. They found 129 householders out of work, and 471 only working at irregular intervals. They made 6850 visits and revisits to infants, 1943 of the babies being newly born, and found 1752 being fed from the breast, 31 breast and spoon fed, 37 fed from bottles with long tubes, 65 from bottles with short teats, 22 by spoon alone, 5 partly from breast and partly from long tube bottles, and 23 partly from breast and partly from bottles with short teats. 306 of the infants were found to be ailing. 1504 of the mothers were healthy, 231 healthy but not strong, 32 very delicate, and 413 were badly nourished; 56 went out to work, and 40 took in work at home. 85 of the infants were fed on Glaxo (dried milk), the infants so fed being brought to the office to be weighed once a fortnight. In a majority of the cases this form of feeding proved beneficial, in some instances markedly so. The Health Visitors got bad methods of feeding changed to better in 121 cases. 60 still births were notified during the year, and there were 27 sets of twins. Of the dwellings visited by the Health Visitors those with 4 or more sleeping-rooms (2·0 per cent.) contained an average of 1·9 occupants at all ages per sleeping-room; those with 3 sleeping-rooms (45 per cent.) contained an average of 3 persons at all ages per sleeping-room; those with 2 sleeping-rooms (41·6 per cent.), 2 persons at all ages per room; and the houses (11·4 per cent.) with only 1 sleeping-room contained 4·5 persons at all ages, which is equivalent to the average population *per house*, taking the City as a whole. A large number of notices to cleanse children (under the Children's Act) were sent out, the great bulk of such cleansing being carried out voluntarily by the parents, with the supervision and advice of the Health Visitors, but in 33 instances it was necessary compulsorily to remove the children and carry out the

cleansing at the Union. The Health Visitors visit all the schools in their districts at least once a fortnight, and examine any child deemed to be dirty or verminous, and issue the necessary notices to the parents. This work in time will effect a great improvement in the relative cleanliness of some, at any rate, of the children, and cannot fail to react beneficially on their homes—which thus come under review.

The Local Government Board requests the M.O.H. to state each year what arrangements have been made for the Medical Inspection of School Children, and to include in his Annual Report an account of the work done under the Act. The arrangements made in this City are those detailed in my 1908 Report (except that the M.O.H. has been appointed the administrative School Medical Officer required by the Board of Education) and continue to work very satisfactorily. The actual inspectorial work has been done by Dr. Mathieson with some slight assistance from Dr. Linton, and the following is a summary of the work done in 1909 and the results obtained. The total number of children examined at routine inspections in the schools was made up of entrants 2172 (boys 1066, girls 1106); leavers, 1537 (boys 783, girls 754). The following are the principal defects found among these children:—Naso-pharyngeal obstruction (enlarged tonsils, adenoids, etc.) (a) sufficiently marked seriously to affect the health, 3·6 per cent.; (b) of a minor degree, 11·5 per cent.; diseases of the eye (including marked visual defects) 2·7 per cent.; diseases of the ear, ·8 per cent.; diseases of the chest, ·5 per cent.; various other defects, 2·43 per cent.; making a total of 10·03 per cent., *for which medical attention was advised*. The parents in each of these cases received a notification of the desirability of obtaining medical attention with the least possible delay, and the homes subsequently were visited by the Health Visitors to learn what had been done. As a result of these enquiries Dr. Mathieson is able to report that 70·5 per cent. of the children deemed by him to need treatment received satisfactory medical attention. The parents were always invited to attend and actually were present

at 67·1 per cent. of the inspections. The presence of a parent at the actual inspection enables the Medical Inspector to give much valuable advice direct, and if only for that reason it is greatly to be hoped that the percentage of attendance among parents at the inspections will steadily heighten. The condition of the teeth of the children inspected is classified as follows: (a) no deeply carious teeth, 21·5 per cent.; (b) 1 to 4 carious teeth, 53·6 per cent.; (c) 5 to 8 carious teeth 18·9 per cent.; (d) 9 to 12 carious teeth 4·9 per cent.; (e) more than 12 carious teeth 1·1 per cent. Public provision of conservative dentistry (*i.e.*, stopping, filling, &c.) is lamentably inadequate to the needs of the population and indeed may be said virtually to be non-existent. During the year I hope the education authority will see its way to secure some provision for the treatment of the more necessitous of the dental cases. It will be noticed that 78·5 per cent. of all the children examined had one or more carious teeth. In addition to the routine inspections in the schools 197 children were examined to determine their relative suitability for admission to the open-air school and from these 108 were chosen and sent to it for varying periods, and whilst at the school these children were from time to time examined and the results (on the whole very satisfactory) tabulated.

902 children sent up by the Chief Attendance Officer, were examined at the Municipal Buildings, and their fitness to attend school determined. At the request of the Head Teachers 586 children were examined for special reasons either at the Schools or at the Municipal Offices; and 9 children were certified as being suited for admission to special Institutions: 103 children were examined at the schools or at the Municipal Buildings with special reference to their mental condition; 37 of these were found and certified to be mentally defective and selected for the Quayside Special School; 56 were found to be mentally subnormal, in some cases the result of defects of hearing, breathing or general nutrition. In the latter instances the parents were advised to secure for them medical treatment. 27 candidates for pupil teacherships were examined in accordance with the requirements of the Board of

Education. The L.G.B. in its last memorandum *re* Annual Reports of Medical Officers of Health asks for information about the sanitary condition of schools, especially public elementary schools. This year it has not been practicable to carry through a systematic inspection of all the schools but so far as the schools have been examined those which are most in need of attention as being more or less unsatisfactory, from the standpoint indicated, are Carrow, St. Phillip's, Heigham, and Quayside (lower) Schools.

Inspection of children gathered for one purpose, viz., education, has in our customary national haphazard fashion of doing things been very successfully utilized for another, viz., testing and incidentally standardizing the national healthiness at the school-going age, at any rate among the attendants at our elementary schools; with results that have already fully warranted the experiment and lead one to hope that this beginning will prove to be but the starting point of a rationalized system of medical inspection of the whole growing population from infancy to adolescence. It is certainly a glaring anomaly medically to inspect children only after the commencement of school life, and to make no provision for their inspection during the vitally important years, which intervene between their birth and the commencement of their education—using that much abused word with the conventional meaning. To the hygienist the inspection of every child at least once a year from infancy to adolescence is the goal to look forward to. Its enforcement should certainly provide us with an efficient means of correcting and minimizing, if it be not possible to eradicate, defects and disabilities. It is preventive work of the most practical type, and should prove of inestimable value to us as a people.

The Secretary of State for the Home Office asked last year for an enquiry to be started here and elsewhere into the effects of factory and other away-from-home labour upon the health of child-bearing women, and the relative vitality of their children. Last year I gave full details as to wages, marriage, age, occupation,

&c., of the mothers, but it was obviously impossible to state how many of the children borne by these mothers in 1908 had reached 1 year of age until the corresponding dates in 1909 had been reached.

As the result of careful and extended enquiries I can summarize the main facts as follows:—(a) In 42 instances the mothers of children born alive and surviving their first year were industrially employed at home, in 18 in factory or workshop, and in 9 elsewhere; in 2 the mothers were not industrially employed subsequent to the birth of the child. Of the children born alive who did not survive their first year in 8 instances the mother was employed industrially at home, in 10 in factory or workshop, and in 1 elsewhere. Of the miscarriages, still births, and premature births 3 occurred among mothers engaged industrially at home, and 4 among mothers employed in factory or workshop. Thus out of 90 children born of mothers employed industrially 71 survived their first year, representing an infantile mortality rate of 211 per 1000 births, the gross rate for the whole population being 119 per 1000 births. Of these infants the proportional mortality rate for those whose mothers (50) were employed industrially *at home* was 160 per 1000 births; whereas the corresponding rate for those whose mothers were employed industrially *away from home* was 290 per 1000 births. It is, I think, important to recall the fact that 30 of the mothers employed industrially away from home were unmarried women, and to bear in mind the adverse influence upon child life of illegitimacy. The proportion of still births among the women employed industrially who were the subject of this enquiry was 3·3 per cent., the corresponding rate for the whole population being 2·5 per cent.

Though the numbers dealt with are relatively small, it is clear from these figures that the influence of industrial employment of the mothers—particularly of such mothers as are employed industrially away from the home—has been very detrimental to infant life. I must add that the enquiries, obviously of delicate

nature, have been carried out for me with great tactfulness by the Health Visitors. I am having the corresponding enquiries continued, and propose to give all the facts about the mothers as well as about the children born in 1909 in the report which will be issued a year hence.

The year under review from an epidemiological standpoint presents no feature equalling in importance the outbreaks of Shell-fish Typhoid which characterised 1908, though it is of interest to record that 40 per cent of the cases of Enteric Fever which occurred in 1909 can reasonably be attributed to shell-fish. If a glance be given to the occupations of the householders in whose dwellings Enteric Fever was reported it will be noticed that a relatively high proportion of these were railway men. I am told that sometimes these men bring home small quantities of mussels, &c., from the coast. The claim of inland districts to be protected from shell-fish, derived from sources the safety of which there is reasonable ground to suspect, remains as imperative as ever, and is certainly deserving of attention from the Legislature. A satisfactory solution of a recurring difficulty would be effected were the Health Authorities of the districts from which shell-fish are obtained made responsible for the fitness of their exports for human food.

The principal feature of the year under review from an epidemiological standpoint has been the ravages of Measles, from which 82 deaths were registered, 77 of them in children under 5. This disease became so prevalent that practically all the infant departments of our schools had to be closed on account of it, and some of the junior departments also. As is usually the case with all child epidemics, Measles spread itself among children in those attendant upon infant schools. I made, and successfully, the experiment of not only keeping going the senior departments of the schools invaded, but also of permitting boys and girls who had themselves had Measles to continue their attendance at schools whilst younger members of their families were victims to the

disease. Measles spreads very little by clothing, &c., and not at all, in my judgment, unless a patient who has the disease, in coughing, projects upon the clothes, &c., infected material. Any way, in no case did ill result from following the procedure indicated. Touching upon child ailments and their dissemination in infant schools, leads me to say that I live in strenuous hopefulness of seeing the Legislature make the age for compulsory attendance at schools, for the ordinary purposes of education, the attainment of at least six years. (A child of my own I would not permit to commence systematic education until it was seven.) On a suitable occasion I can give physical, physiological, and psychological reasons why I hold this opinion about the proper age to begin systematized "schooling"; but to prevent misinterpretation I will add that I am an equally strenuous believer in bonâ-fide "play" schools for children below that age, especially of open air "play" schools for the children who later on will be admitted to our elementary schools.

Whilst there was a considerable amount of Scarlet Fever, I do not feel justified in speaking of it, except to a localized extent, as having been "epidemic," and of diphtheria happily there was considerably less than in 1908. With these diseases the bulk of the school cases were found in attendants at the infants' departments. Whilst there were a number of cases of Scarlet Fever quite septic in character, the general run of the disease was to a mild type—so mild in many instances as to cause real embarrassment in diagnosis; a considerable amount of the Diphtheria was of the nasal type, and this again gives rise to difficulties, because the disease can so easily be, and so frequently is, thought to be only a cold in the head with a running nose. Swabbing and bacteriological examination in any suspicious case will clear up doubt.

The average number of patients in the Isolation Hospital on Saturday nights throughout the year was 71. The average number of the Nursing Staff (excluding the Matron and the Assistant

Matron) was 22, and the average number of the Domestic Staff 14. The new observation pavilion, consisting of glass-sided rooms each entirely separated from the others, was brought into use early in October, and has proved of the greatest service. The efficacy of the isolation, and incidentally of the nursing, has been subjected to severe and I am glad to say satisfactory tests. Half-a-dozen diseases, inclusive of Chicken Pox, have been treated concurrently without any cross infection resulting. I mention Chicken Pox especially because it is a disease which furnishes so good a test of efficient isolation when dealing with children. Isolation being unquestionably the right method of dealing with infectious diseases, I look forward hopefully to seeing the practice of mixing together patients with the same disease in large common wards being discarded in favour of separate glass-sided "cubicles"; which whilst enabling the occupants to see and to converse with each other, will prevent them from coming into actual contact. I hope in time we shall have our large wards, at any rate in part, so divided up, and am satisfied that it will prove an advantageous alteration. It is in practice not possible to mix together patients suffering from the same disease, but with differing degrees of intensity, without great risk of secondary exacerbations and complications, which mean lengthened stay in the Hospital and a more lingering and infectious convalescence. The Hospital destructor continues to be of great service in enabling us satisfactorily and innocuously to dispose of discharges, dressings, and debris generally.

The L.G.B. asks the M.O.H. to give "definite general information" respecting the "Methods of control of Tuberculosis" in his district "number of cases notified"; "action taken in respect of known cases and of deaths"; and "amount of hospital accommodation for advanced and for earlier cases of disease," &c. In this picturesque and very ancient district the methods of control virtually are restricted to the giving of sage counsel to the community and sympathetic advice to the sufferers; to the remedying, where practicable, of unfavourable conditions in the home or work-

place and to disinfection of the room occupied by the victim when the Fates have snipped the thread of life with the "abhorred shears." The Health Authority proffers and pays fees for the notification (voluntary) of this disease, hoping thus to hear of more of it; and in the case of Poor Law patients the Medical Officers are required compulsorily to notify. From this latter source I received 75 notifications and the remainder (78) were voluntary ones. 64 per cent. of all the cases notified were males. In 40 per cent. of the cases there was evidence of family taint. 2.5 per cent. had received treatment in Sanatoria. In 11.5 per cent. of the cases there was evidence of dampness in their houses; 42 per cent. of the cases were sharing bedrooms with others. Of the houses occupied 4.7 per cent. possessed 1 bedroom, 26.0 per cent. 2 bedrooms, 38.9 per cent. 3 bedrooms, 30.4 per cent. 4 or more. The average population of the houses with 1 bedroom was 2.5 persons at all ages, of the houses with 2 bedrooms 3.5 persons, of the houses with 3 bedrooms 4.5 persons, and houses with 4 or more bedrooms 8.5 persons. These percentages relate to 124 dwellings, as in 29 out of the 153 cases information could not be obtained. The cases notified were in the main past the stage when Sanatorium treatment would be of benefit. Many of the Poor Law cases go for varying periods into the Union Infirmary, and as soon as they have recuperated a bit, come out only to break down again. These "in-and-outers" may thus get notified several times in the course of a year (I have counted them once only). In all instances, when we know of a case of Tuberculosis, a call is made at the home by a Health Visitor, a card of instructions is explained and left, and a report is made upon the general character of the dwelling, *e.g.*, the number of bedrooms and of their occupants, the amount of sun which the dwelling obtains, the ventilation, whether dry or damp, &c., and the Health Department does its best to get any serious defects remedied, and gives advice as tactfully as possible to the inhabitants. When a death occurs an offer is always made to disinfect the room occupied by the patient, and is almost invariably gratefully accepted. Last year there were 131 deaths certified to be due to tuberculous disease of the lungs (Phthisis),

and 70 to other forms of tuberculous disease, making a total of 201 deaths from tuberculous diseases. The average number of such deaths in the preceding 16 years has been 228. In 1908 the number of such deaths was 212, so that there is a gradual fall in the gross mortality.

Of the deaths from Phthisis registered in 1909, 3 took place in the Norfolk and Norwich Hospital and 16 in the Union Infirmary. Of the 70 deaths from the other tuberculous diseases, 6 took place in the Norfolk and Norwich Hospital, 10 in the Jenny Lind Infirmary, and 1 in the Union Infirmary. It is, I think, an estimate that falls below the actual facts which assumes that, for every fatal case of Phthisis, there are three others with the disease in a recognisable form in a community. Upon this basis one assumes that there are at any given moment 500 cases of Phthisis in this City—one-fourth of whom, it is fair to affirm, would be suitable for Sanatorium (curative treatment); one-half of whom would derive greater or lesser benefit from it (palliative treatment); and one-fourth who would derive none; are, in fact, to all intents and purposes, hopeless and moribund. A small proportion of the suitable cases were treated at Kelling from their own resources, or through the help of friends, and in some cases of societies; but this service is not systematized nor in any way adequate to the need there is for providing Sanatorium treatment at the earlier stages. On an adequate scale this will only be forthcoming, for the mass of the workers, when we have established a national system of insurance against invalidity. Meantime I recall a proposition I made some two or three years ago, viz., that for early cases of Phthisis (suitable for Sanatorium treatment) occurring in persons who are unable to provide treatment for themselves, and who, if no such treatment be provided, sooner or later, with probably their families, will fall upon the rates, provision should be for treatment at the public charge. I estimated that for a farthing rate 25 persons could be given three months' treatment each at Kelling in a year. It is for these first-stage Phthisical that I am most anxious for provision to be made, because such treatment will be productive

of the best results, and most truly economical. They have a fighting chance of recovery and I would have it fought for. When the new infirmary at the Union is brought into use more of the in-and-outers will, I do not doubt, avail themselves of its advantages (at present I find a certain amount of prejudice against being treated at the Union among consumptives); and as a haven of rest for those who await the Beckoning Finger it will render to the community great and melancholy service. The Norfolk and Norwich Hospital sets aside six beds for the treatment of the phthisical—if we assume that these are divided equally between the City and County—that distribution gives three to the City. The Union Infirmary admits phthisical patients in no fixed ratio. As many as 24 have been there at one time, so we may deem that number of beds to represent the provision it can make. (During the year 66 persons with Tuberculous disease have been admitted into the Union Infirmary; eight of these were admitted twice, one three times, one four times, and one five times. The largest number of Tuberculous patients at any one time was 24, and during the year there were 16 deaths, or, roughly, 25 per cent. of the total number admitted.)

There were slight increases in the mortality from Respiratory Diseases, Scarlet Fever, Alcoholism, and Venereal Diseases; and slight decreases in Heart Diseases, Erysipelas, and Whooping Cough; a marked increase in the mortality from Measles; a marked decrease in mortality from Enteric Fever and (less marked) from Diphtheria and Influenza. The mortality rates for Puerperal Fever and Diarrhœal diseases remained stationary; but seeing that the population is estimated to increase at the rate of about 1000 a year, a repetition in 1909 of the figure reached in 1908 signifies a fractional improvement in the former year.

During the year 703 certificates were given to school children and employees (in respect of infectious diseases in themselves or the dwellings) as to their fitness to resume attendance at school or employment, and Dr. Linton made bacteriological examinations of 1430 swabs, &c. (69 widal tests of the blood of suspected or

doubtful Typhoids) in the laboratory at the Isolation Hospital. This laboratory, whilst well suited for Hospital work, is both too small and too remote to cope successfully with the amount of bacteriological work which will be needed in the future if my department is to be conducted with the greatest efficiency. A laboratory attached to my offices, for which there is space in their rear, would serve us much more conveniently for town use, and would be specially helpful in dealing with ringworm, doubtful throats, &c., amongst school children. As bearing upon the propagation (and prevention) of infectious ailments amongst us, I must reiterate an opinion I have expressed on previous occasions, and one to which I very pertinaciously adhere, viz., that it is most desirable that Sunday Schools should be subjected to the same regulations as to air and floor space, per scholar, as prevail in the public Elementary Day Schools.

Midwives Act. There were 12 midwives on our register last year, three of them in the service of the Maternity Charity. I can report in general terms favourably of their work and conduct. After this year none but registered women are to be permitted to act as midwives, and the administration of the Midwives Act will be more stringent. At present an unregistered person can act as a midwife provided that she does not specifically call herself one, and such a person does not appear to be amenable to control by law, except as the possible outcome of an inquest. I have utilized the Health Visitors (each of whom is a certified midwife) in making inquiries respecting still-births, &c., and in reporting upon the home surroundings, bedrooms, &c., of the practising midwives. Special stress is laid upon the importance of keeping the finger nails scrupulously clean and disinfecting the hands carefully, and generally upon care and cleanliness being exercised in handling and keeping instruments. Midwives are advised to wear washable dresses. No instance of culpable carelessness came to my notice.

Carrying out the Factory and Workshops Act, 680 inspections of factories and workshops were made and 128 defects reported.

and remedied—101 lists of out-workers were sent in (62 of them twice a year) ; 948 inspections of out-workers' (male and female) premises were made—less than last year, but two of the inspectors were incapacitated by illness for considerable periods. In 131 instances out-work was being done in unwholesome premises (Section 108), the greater number of which were dealt with by verbal notices—in 22 instances only were formal notices required ; in 39 instances infectious illness occurred in out-workers' dwellings (Sections 109-110), and in none of these was other than verbal directions required. The total number of registered workshops on register was 674, and there were 4 underground bakehouses (Section 101) in use at the end of the year. In 32 instances action was taken under the Public Health Acts in matters referred by H.M. Inspector of Factories.

Under the Food and Drugs Act 218 samples were purchased to be submitted to analysis, and 16 samples of water were also taken from the steadily diminishing number of wells. Of the foods, &c. (the full details are set out in the Chief Sanitary Inspector's report) 186 samples were certified to be genuine in quality and 32 to be adulterated. In 22 of these cases prosecution of the vendors was undertaken, and in 18 the magistrates imposed fines ranging from 5/- to £5. In 2 cases the summonses were withdrawn, and in 2 instances the magistrates dismissed the cases ; 10 vendors were written to and cautioned. 53 of the samples of milk (175 in all) were taken on Sundays. A large proportion of the samples of milk contained more than the Board of Agriculture's standard amount of cream (3·0 per cent.), evidence in itself that the said standard is a very fair, and indeed a lenient one. Of wells from which samples were taken the water proved to be "unfit for drinking purposes" in 7, and these were closed.

The Report of the Chief Sanitary Inspector gives a summary of the practical sanitary work carried out during the year, and states what has been done to maintain a sanitary condition in and to improve the general state of dairies, cowsheds, milk shops, common lodging houses and slaughter-houses, &c. Mr. Brooks

also records the change which has been effected in the character of the closet accommodation provided for dwellings, and for factories and workshops. The substitution of water closets for less satisfactory types is being effected with steady continuity, this change taking place last year in nearly 1200 instances—the highest number reached. The Report of the Canal Boats Inspector has been of a satisfactory character.

I incorporate with this Report the statistical table shewing the number of tenements in the wards of the City *at the last Census*. I also include, and for the last time, a table of differentiated death rates for the City parishes and the relative densities of their populations. These are only approximative, of course, but are the best we can arrive at so long as such an undesirable period (for all statistical purposes) as 10 years is allowed to intervene between each enumeration of the people. With a lessened interval between the taking of one Census and another all such estimates will become more accurate. Next year I propose to give the populations, special death rates, &c., of the wards of the City, and hope by thus using larger and more stable populations to obtain more reliable results. The population of the City as a whole is assumed to have increased by rather more than a tenth since the last Census. If we suppose that the populations of the different parishes have increased in the same ratio one-tenth should be added to the figures cited.

Drs. Mathieson and Linton, Mr. Brooks and the Assistant Inspectors, the Health Visitors, the Staff at the Isolation Hospital, and indeed all the members of my department, have laboured painfully and truly to promote what, “according to our lights,” we have deemed to be the welfare of the City and the well-being of its people.

(Signed)

HARRY COOPER PATTIN.

March 21st, 1910.

METEOROLOGICAL NOTES.

(From observations taken by MR. A. W. PRESTON, F.R. Met.S., at
Norwich).

				In 1908.	
Barometer reduced to sea level and 32deg. Fah., from 9 a.m. and 9 p.m. readings:—	Highest (Jan. 4th)	...	30·68 ins.	30·66	
	Lowest (Dec. 3rd)	...	28·36 ins.	28·75	
	Mean	... ..	29·99 ins.	29·919	
Temperature—Maximum (August 12th)		...	83·2 degs.	81·0	
			(Aug. 3rd)		
Minimum (March 5th)		{	in screen	20·4	17·0
,, ,,			on grass	15·8	14·0
			(Jan. 5th)		
Mean daily maximum		...	54·9	55·7	
Mean daily minimum		...	41·2	42·4	
Mean temperature of year		...	48·0	49·0	
Mean daily range		...	13·7	13·3	
Mean dry bulb (9 a.m.)...		...	48·8	49·6	
Mean wet bulb (9 a.m.) ...		...	45·8	46·7	
Mean dew point (9 a.m.)		...	42·6	43·7	
Mean relative humidity (9 a.m.)			80%	80%	
No. of nights with		{	in screen	75	56
frost			on grass	140	108
Rainfall—Total fall		...	27·82 ins.	26·16	
Above average by		...	2·07 ins.	0·59	
			(below average)		
Greatest fall in one day (July 27th)...			·78 ins.	1·80	
			(July 13th.)		
Number of days on which rain fell		...	198	194	
Number of days on which snow fell		...	35	27	
Wind—Prevailing directions, w., s.w. and n.w. Gales on 9 days.					

Summary of the Geology of Norwich.*

The geological construction of the soil underlying the City is simple in character. The higher levels are made up of glacial beds, through which the valleys have been excavated, exposing at their margins the crag formation and chalk, while gravel and alluvial deposits occupy the lower ground. The chalk, which at Norwich is nearly 1200 ft. thick, and underlies the whole of the City, comes to the surface in the Market Place, and in other places at a similar level; but it may be reached at no great depth in all parts of the Municipal area. The order of the succession of the glacial and crag beds is shown in excavations on the sides of the high ground surmounted by Mousehold Heath, between which Heath and the City proper winds the River Wensum. Except for some layers of peat in the valley, and a bed of brick-earth over part of the higher ground (as, for example, near the Victoria Station), the soil of the City is of a porous character, and much percolation of fluid takes place through the gravels, &c., into the chalk. The general trend of the drainage of the greater portion of the inhabited area of the City is toward the Wensum.

*Compiled from information contributed by Mr. F. W. Harmer, F.G.S.

DEMOGRAPHICAL STATISTICS.

<i>Enumerated Population at the Census of 1901</i>	...	(a) 111,733
<i>Estimated Population in the middle of 1909</i>	...	(b) 124,136
<i>Area in Statute Acres</i>	... ..	7905
<i>Density of Population (i.e., number of persons per acre) [Rateable value, £462,863]</i>	...	15.7
<i>Total number of Births registered in 1909</i>	...	3004
<i>Representing a Birth-rate of</i>	... ..	24.2 per 1000
<i>Average Birth-rate of the 76 great towns being</i>		25.7 per 1000
<i>Total number of Deaths registered in 1909</i>	...	1737
<i>Representing a gross recorded Death-rate of</i>	...	14.0 per 1000
<i>*“Corrected Death-rate” for the year</i>	...	13.3 „
<i>†Average Death-rate in the 76 great towns</i>	...	14.6 „
<i>‡Comparative Mortality Figure</i>	... ..	898
<i>Average Norwich Death-rate for the previous 5 years, 1904 to 1908 (inclusive)</i>	... ..	16.0 per 1000
<i>Deaths from the seven principal Zymotic Diseases</i>		191
<i>Representing a Zymotic Death-rate of</i>	...	1.5 per 1000
<i>Average Zymotic Death-rate in 76 great towns being...</i>	... ..	1.4 „

* The “Corrected Death-rate” signifies the Death-rate which would obtain in Norwich if the local age and sex distribution were the same as those of the country generally.

† Estimated from the Registrar-General's Quarterly Reports.

‡ Taking 1000 as the mortality figure of the United Kingdom as a whole.

(a) Excluding population added in November, 1907.

(b) Including „ „ „ „

The Deaths of Norwich Citizens from Zymotic Diseases included :—

	Scarlet Fever.	Diphtheria.	Enteric Fever.	Measles.	Whooping Cough.	Diarrhoeal Diseases.	Puerperal Fever.	Erysipelas.	Influenza.
Under 5 years of age...	9	6	1	77	20	0	0	1	0
Over 5 years of age ...	1	12	4	5	0	5	1	4	11

A glance at the above table will show how large a proportion of the deaths occurred in children under 5 years of age, and also how great a number of these succumbed to Measles, Whooping Cough, and Diarrhoeal Diseases.

The deaths under one year of age numbered 356, representing a death-rate of 2·8 per 1000 of the population at all ages.

The Infant Mortality Rate (i.e. the proportion of deaths under one year of age to every 1000 births) was 119·0

In the 76 great towns it averaged ... 120·25

This return for Norwich is not so favourable as one compared with the 76 towns as was that for last year, when the figures were 115·5 and 128·75 respectively. A special report differentiates the certified causes of death, which include no less than 20 deaths from Measles.

The Death-rate between the ages of 1 and 5 years was 1·3 per 1000 of the population at all ages; in 1908 it was 0·9.

The Death-rate between the ages of 5 to 15 was 0·54 per 1000 of the population at all ages; in 1908 it was 0·56.

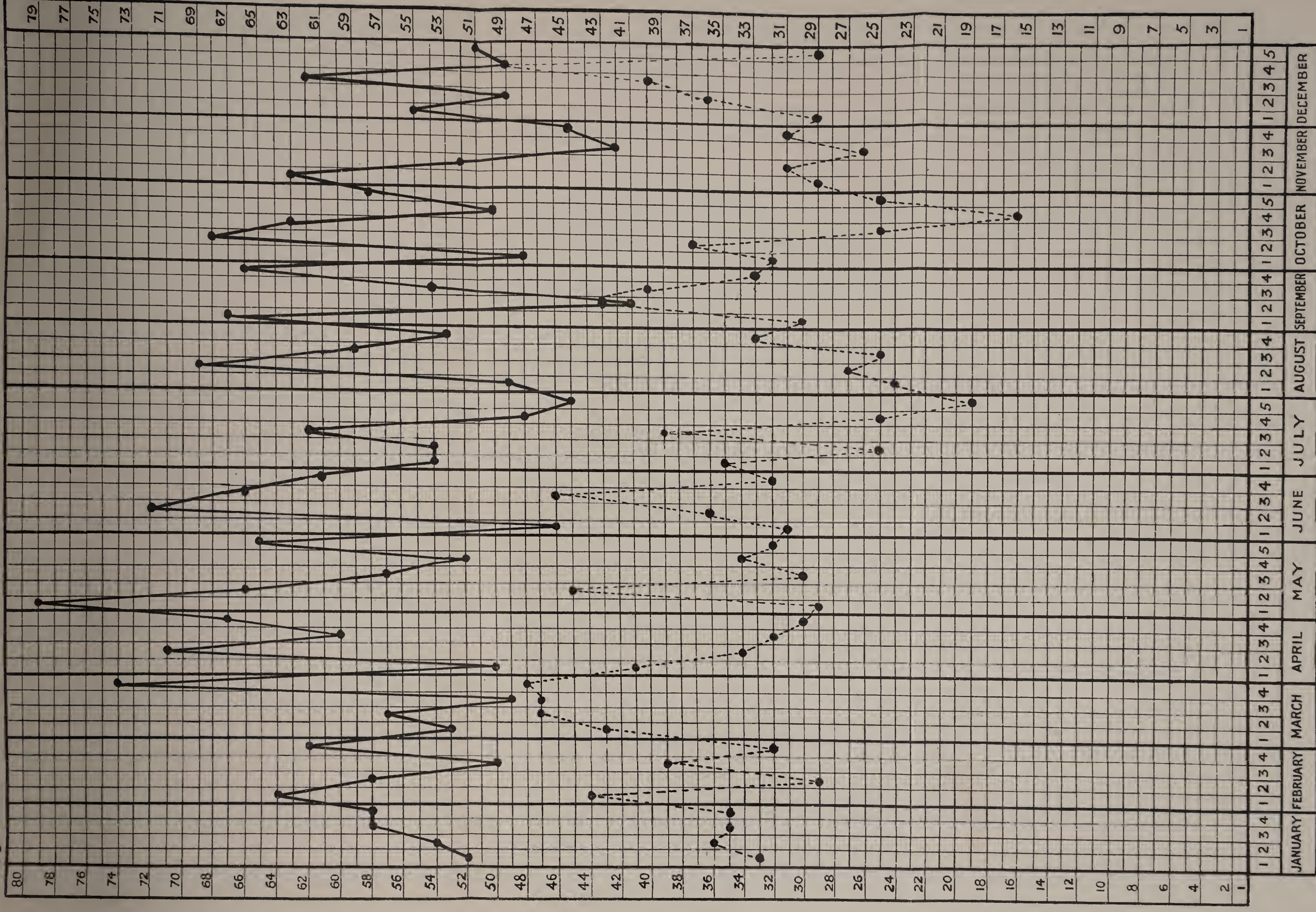
The Death-rate between the ages of 15 and 25 was 0·55 per 1000 of the population at all ages; in 1908 it was 0·59.

The Death-rate between the ages of 25 and 65 years of age was 4·2 per 1000 of the population at all ages; in 1908 it was 4·0.

UNOSS RECORDED NUMBER OF DEATHS FROM ALL CAUSES BLACK DASHES,-----

1

19061



GIBBS & WALLER, LTD. LITHO, NORWICH.



INFANTILE MORTALITY DURING THE YEAR 1909.

Deaths from stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.		Under 1 Week.	1-2 Weeks	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
All Causes.	{ Certified ...	72	11	24	14	121	32	29	26	22	18	20	13	16	23	14	10	344
	{ Uncertified ...	11	...	...	...	11	...	1	...	...	...	...	...	...	...	...	...	12
Common Infectious Diseases. (29)	{ Small-pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Chicken-pox ...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
	{ Measles ...	...	...	...	...	...	...	...	1	...	1	2	5	2	5	3	1	20
	{ Scarlet Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Diphtheria: Croup ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhoeal Diseases. (45)	{ Whooping Cough ...	...	...	...	...	...	...	2	3	1	...	...	...	1	1	...	...	8
	{ Diarrhoea, all forms ...	...	...	1	...	1	7	5	4	1	6	1	...	3	2	1	...	31
	{ Enteritis (not Tuberculous) ...	...	...	...	...	...	1	1	2	+	...	1	1	...	...	1	1	12
	{ Gastritis, Gastro-intestinal Catarrh ...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2
	{ Premature Birth ...	45	5	5	...	55	5	1	4	...	...	...	...	...	...	...	...	65
Wasting Diseases. (129)	{ Congenital Defects ...	6	...	3	1	10	...	...	...	...	...	...	...	...	...	...	...	10
	{ Injury at Birth ...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
	{ Want of Breast-Milk ...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	2
	{ Anrophy, Debility. Marasmus ...	16	1	6	5	28	4	3	8	+	...	...	...	1	1	2	...	51
	{ Tuberculous Meningitis ...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	2
Tuberculous Diseases. (22)	{ Tuberculous Peritonitis: Tabes Mesenterica ...	...	...	1	1	2	...	1	...	3	3	3	1	1	...	...	...	14
	{ Other Tuberculous Diseases ...	1	...	...	...	1	...	...	...	1	...	2	...	...	1	1	...	6
	{ Erysipelas ...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1
	{ Syphilis ...	...	...	1	...	1	1	1	...	...	1	...	...	...	...	...	...	4
	{ Rickets ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Causes	{ Meningitis (not Tuberculous) ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2
	{ Convulsions ...	8	2	1	4	15	3	5	...	3	3	3	2	2	4	2	3	45
	{ Bronchitis ...	...	...	1	1	2	3	5	2	1	1	1	2	2	1	1	1	22
	{ Laryngitis ...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	3
	{ Pneumonia ...	...	...	1	...	1	2	1	1	1	2	1	...	1	4	3	2	19
Other Causes	{ Suffocation, overlaying...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Other Causes ...	6	3	3	2	14	6	3	1	1	1	3	1	2	2	...	1	35
		83	11	24	14	132	32	30	26	22	18	20	13	16	23	14	10	356

DIFFERENTIAL PARISH STATISTICS.

PARISH.	Area in Statute Acres.			Population at all ages 1901 Census.	Density of Population per Acre.	Deaths at all Ages.	Under 1 year.	1 to 5 years.	65 & upwards.	Deaths from Zymotic Diseases.	Deaths from Tuberculous Diseases.	Gross Death Rate per 1000 of the Population at all Ages.
	A.	R.	P.									
All Saints with S. Julian	27	3	37	1962	70	26	5	2	9	1	2	13·2
S. Andrew	...	...	...	...	...	...	...	...	...	...	...	...
S. Andrew	11	1	10	500	45·5	6	1	...	...	...	...	12·0
S. Augustine	21	2	27	2373	110	26	9	...	11	1	3	10·9
S. Benedict...	18	2	38	1865	101	19	5	...	5	4	1	10·1
S. Clement (without)	220	3	35	7985	36	116	36	9	27	16	21	14·2
S. Clement (within) with S. Edmund	19	1	12	836	44	19	7	4	3	3	1	22·7
S. Etheldred with S. Peter Southgate	25	1	26	1694	67	18	5	2	4	2	2	10·6
S. George Colegate	16	3	15	1351	80	14	3	2	6	1	3	10·3
S. George Tombland	14	1	32	729	52	3	...	...	1	...	...	4·1
S. Giles'	22	3	18	1211	57	13	3	1	4	2	...	10·7
S. Gregory with S. Lawrence	14	3	15	963	64	11	1	1	5	1	2	11·3
S. Helen (with the Great Hospital)...	19	1	35	541	28	22	1	...	20	...	1	40·6 (a)
S. John Maddermarket	8	1	25	262	32	4	1	...	2	...	...	15·2
S. John Sepulchre	30	3	18	2732	90	38	8	9	11	9	6	13·9
S. John Timberhill	10	2	23	1015	100	9	1	3	4	1	...	8·8
S. James with Pockthorpe	408	2	3	9113	22·5	108	37	20	17	27	10	11·8
S. Margaret with S. Swithin	12	3	31	1114	85	16	4	2	7	3	3	14·3
S. Martin-at-Palace	12	0	23	584	48	12	5	1	5	2	2	20·5
S. Martin-at-Oak	29	1	35	2432	84	29	8	6	7	5	2	11·4
S. Mary-at-Coslany	12	1	8	1208	100	15	6	...	7	2	1	12·4
S. Michael-at-Coslany	12	0	0	647	54	4	...	...	1	...	2	6·1
S. Michael-at-Plea	5	1	36	106	21	...	...	...	...	...	...	...
S. Michael-at-Thorn	15	2	16	1406	90	15	6	...	5	4	2	10·6
S. Paul	42	3	6	5434	126	66	13	6	25	8	9	12·1
S. Peter-at-Hungate	3	0	33	258	86	7	...	1	4	...	...	27·1
S. Peter Mancroft	42	0	7	1557	37	26	1	3	11	2	3	16·6
S. Peter Parmentergate	49	1	15	2570	52	29	5	3	6	4	4	11·2
S. Saviour	14	1	20	1180	84	14	1	...	9	3	1	11·0
S. Simon and S. Jude	4	0	20	339	85	8	2	...	2	...	3	23·5
S. Stephen (with N. & N. Hospital)...	56	1	23	3235	58	183	14	15	39	9	17	56·2 (b)
Eaton (with Jenny Lind Infirmary)...	1234	3	30	3152	2·5	90	29	7	25	2	14	28·5 (c)
Earlham	1305	1	4	320	0·25	...	...	...	...	...	...	...
*Heigham	817	1	6	33015	40·5	565	85	43	234	59	64	17·1
Hellesdon (Hamlet of)	872	1	20	953	1·09	15	4	...	7	1	1	15·7
Thorpe Hamlet (with Brit. Barracks and Prison)	751	0	7	6450	8·5	59	16	1	33	5	4	9·1
†Trowse, Carrow. and Bracondale	125	1	34	3786	30	4	...	...	3	...	...	1·0
Cathedral Precints (S. Mary-in-the Marsh)	47	1	5	451	9·5	3	...	...	2	...	...	6·8
Lakenham S. Mark	1102	1	9	6113	5·5	115	26	21	37	20	15	18·7
On Boats and Barges (Wensum)	...	...	...	...	...	1	...	...	...	...	...	...
Extra Parochial (liberty of Town Close)	122	4	0	299	2·5	...	...	...	...	...	...	...
Catton	167	0	0	536	3·2	7	3	...	2	1	3	13·0
Sprowston	156	0	0	1456	9·3	21	6	1	3	1	2	14·4

(a) Deducting Deaths in Great Hospital, Death Rate for remainder of Parish was 7·3.

(b) " " in Norfolk and Norwich Hospital, Death Rate for remainder of Parish was 21·6.

(c) " " in Jenny Lind Infirmary, Death Rate for remainder of Parish was 15·2.

* Includes S. Bartholomew, S. Philip, Holy Trinity, and S. Thomas, Heigham.

† Trowse S. Andrew, with Lakenham S. John the Baptist, and All Saints (part of).

Whole City – Density of Population per acre, 15·7. Gross Death Rate, 14·0.

List of Ecclesiastical Parishes in the City of Norwich, with the Number of Inhabited Houses and the Population enumerated in each at the Census of 1901.

	Population.	Inhabited Houses.	Number of Persons per House.
* Drayton, S. Margaret, with Hellesdon, S. Mary (part of)	950	203	4·7
† Earham, S. Mary, with Bowthorpe, S. Michael (part of)	320	73	4·4
Eaton, S. Andrew	3,152	678	4·6
HEIGHAM :			
Holy Trinity	10,956	2,720	4·0
S. Bartholomew	11,584	2,570	4·5
S. Philip	5,350	1,377	3·9
S. Thomas	5,125	1,008	5·0
Lakenham, S. Mark	6,113	1,437	4·3
New Catton, Christ Church	7,985	1,779	4·4
NORWICH :			
All Saints with S. Julian	1,962	460	4·3
S. Andrew	500	114	4·4
S. Augustine	2,373	554	4·3
S. Benedict	1,865	443	4·2
S. Clement with S. Edmund	836	192	4·4
S. Etheldred with S. Peter Southgate	1,694	378	4·5
S. George of Colegate	1,351	324	4·2
S. George Tombland	729	131	5·6
S. Giles	1,211	288	4·2
S. Gregory with S. Lawrence	963	215	4·5
S. Helen	541	81	6·7
S. James with Pockthorpe	9,113	1,848	5·0
S. John de Sepulchre	2,732	594	4·6
S. John Maddermarket	262	71	3·7
S. John the Baptist, Timberhill	1,015	235	4·3
S. Margaret with S. Swithin	1,114	316	3·5
S. Martin at Oak	2,432	577	4·2
S. Martin at Palace	584	151	3·9
S. Mary at Coslany	1,208	293	4·1
S. Mary in the Marsh	451	78	5·8
S. Michael at Plea	106	29	3·7
S. Michael at Thorn	1,406	345	4·1
S. Michael Coslany	647	157	4·1
S. Paul	5,434	1,198	4·6
S. Peter Hungate	258	67	4·0
S. Peter Mancroft	1,557	308	5·0
S. Peter Permountergate	2,570	589	4·4
S. Saviour	1,180	307	3·8
SS. Simon and Jude	339	67	5·0
S. Stephen	3,235	715	4·5
Thorpe, S. Matthew	6,450	347	4·8
† Trowse, S. Andrew, with Lakenham, S. John the Baptist and All Saints (part of)	3,786	789	4·3
Extra Parochial (Liberty of Town Close)	299	61	4·9

* The Parish of Drayton S. Margaret with Hellesdon S. Mary is partly in the Civil Parishes of Drayton and Hellesdon. The total number of Inhabited Houses was 371, and the Population 1984.

† The Parish of Earham S. Mary with Bowthorpe S. Michael is partly in the Civil Parish of Bowthorpe. The total number of Inhabited Houses was 85, and the Population 382.

‡ This Parish is partly in the Civil Parish of Trowse Newton. The total number of Inhabited Houses was 951, and the Population 4,553.

The Death-rate at and over 65 years of age was 4·0 per 1000 of the population at all ages; 1908 it was 4·0.

There were 92 more male than female children born in the city during the year. 156 of the births were children known to be illegitimate. There were 32 deaths under one year of age of *illegitimate* children, or 205 per 1000 *births*—the rate among the *legitimate* children being 108 per 1000 *births*; 60 stillbirths were notified to me during the year.

NORWICH SPECIAL DEATH-RATES FOR 1909.

	Per 1000 of the population at all ages. 1909.	In 1908.	In 1907.
From all Tuberculous Diseases ...	1·6	1·7	1·6
„ Tuberculosis of the Lungs			
(Phthisis) ...	1·0	1·1	1·1
„ Respiratory Diseases, excluding Phthisis ...	2·2	2·0	2·3
„ Heart Disease ...	1·5	1·6	1·5
„ Scarlet Fever ..	·07	·03	·019
„ Diphtheria ...	·14	·23	·38
„ Enteric (Typhoid) Fever ...	·04	·3	·12
„ Puerperal Fever ...	·008	·008	·02
„ Erysipelas ...	·04	·06	·05
„ Measles ...	·65	·008	·02
„ Whooping Cough ...	·016	·2	·36
„ Diarrhœal Diseases ...	·4	·4	·5
„ Influenza ...	·09	·2	·08
„ Alcoholism ...	·15	·10	·16
„ Venereal Diseases ...	·06	·03	·04

The following Deaths occurred in *Public Institutions*:—Norfolk and Norwich Hospital, 125; the Union Infirmary, 133; the Isolation Hospital, 22; Jenny Lind Infirmary, 42; the Prison, 3; the Barracks, 3.

Inquest cases amounted to 6·7 per cent. of deaths from all causes.

In the 76 great towns the average was 7·8 per cent.

Deaths in Public Institutions amounted to 17·6.

In the 76 great towns the average was 26·9 per cent.

Uncertified deaths (i.e., death certificate not signed by a registered medical practitioner) amounted to 0·81.

Average in 76 great towns, 0·8 per cent.

9 of the deaths of infants were certified,—neither by a Medical Practitioner nor by the verdict of a Coroner's jury. 8 of these deaths occurred within the first week of life; assigned causes, "Want of Vitality," 5; "Asthenia," 1; and "Premature Birth," 3.

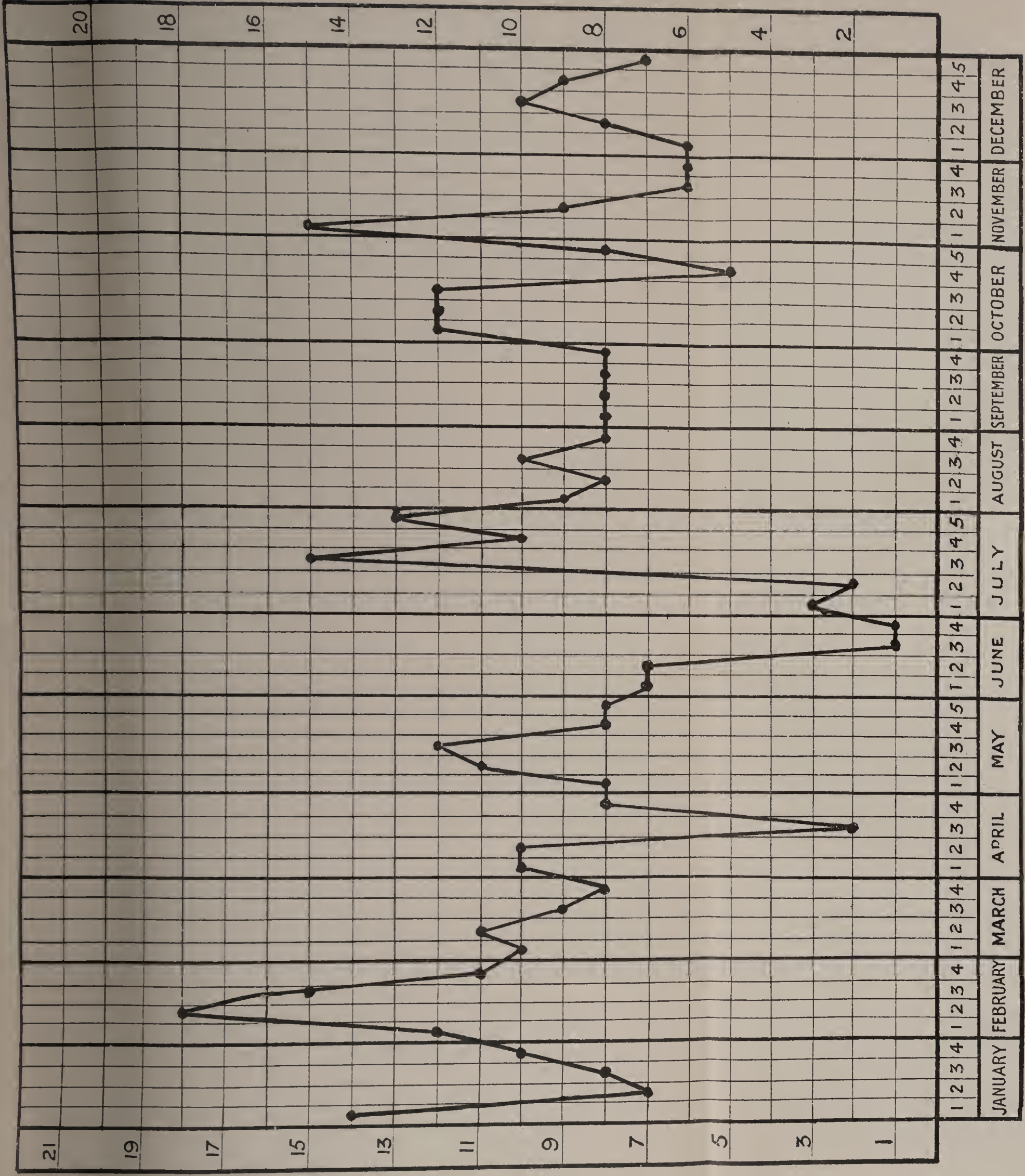
It is not creditable to the State, as the Guardian and Conservator of the prospective interests of the race, to lose a single subject without being furnished with a certificate of the cause of death, properly attested. The law now allows a Registrar, almost always a layman, to accept a certificate from an unqualified person, provided that he, the Registrar, is persuaded that deception is not being practised. The proper course is, without doubt, to hold an inquiry in every such case, and, where needful, a post-mortem examination. These steps will probably be taken only when the registration of the cause of death is placed under the control of the Sanitary Authority.

I caused enquiries to be made in 296 special cases whether the *child dying under one year of age was insured*, and found that 36 per cent. of these children were insured.

There were 18 inquests held upon children under one year of age by the Coroner or his Deputy, 3 of these children being illegitimate.

Of the 32 deaths of illegitimate infants, 6 were certified to be due to Diarrhœal Diseases, 6 to Wasting Diseases, 4 to Lung Diseases, 1 to Tuberculous Diseases, 1 to "Convulsions," 1 to Congential Syphilis, 2 to Measles, 2 to Jaundice, 1 to Gastritis, 2 to Premature Birth, 1 to Pemphigus, and 5 to Insufficient Nourishment (3 inquests).

NOTIFICATIONS OF SCARLET FEVER, 1909.



ISOLATION HOSPITAL.

During the year 437 patients with Scarlet Fever, 239 with Diphtheria, and 18 with Enteric Fever were removed to and treated in the Hospital. In 1908 the corresponding figures were 215, 304, and 156.

Of the 698 cases removed to the Hospital 315 were males and 383 females. In 1908 these proportions were 308 and 307 respectively.

With Scarlet Fever 109 of the patients were under 5 years of age.

„	„	227	„	„	between 5 and 10 years of age.
„	„	61	„	„	between 10 and 15 years of age.
„	„	27	„	„	between 15 and 25 years of age.
„	„	13	„	„	over 25 years of age.

With Diphtheria 55 of the patients were under 5 years of age.

„	100	„	„	between 5 and 10 years of age.
„	52	„	„	between 10 and 15 years of age.
„	21	„	„	between 15 and 25 years of age.
„	11	„	„	over 25 years of age.

With Enteric Fever 0 of the patients were under 5 years of age.

„	„	6	„	„	between 5 and 10 years of age.
„	„	3	„	„	between 10 and 15 years of age.
„	„	3	„	„	between 15 and 25 years of age.
„	„	6	„	„	over 25 years of age.

As in previous years the greatest number of patients were under 15 years of age. 3 infants were admitted with mothers.

There were 24 deaths in the Hospital during the year, 6 from Scarlet Fever, 16 from Diphtheria, and 2 from Enteric Fever. The total Hospital Death-rate was 3·0 per cent for all diseases, for Diphtheria 6·0 per cent., Scarlet Fever 1·2 per cent., Enteric Fever 10·0 per cent.

There were 14 "return" cases during the year, or 2·0 per cent.—a result which bears testimony to the vigilance exercised in discharging patients.

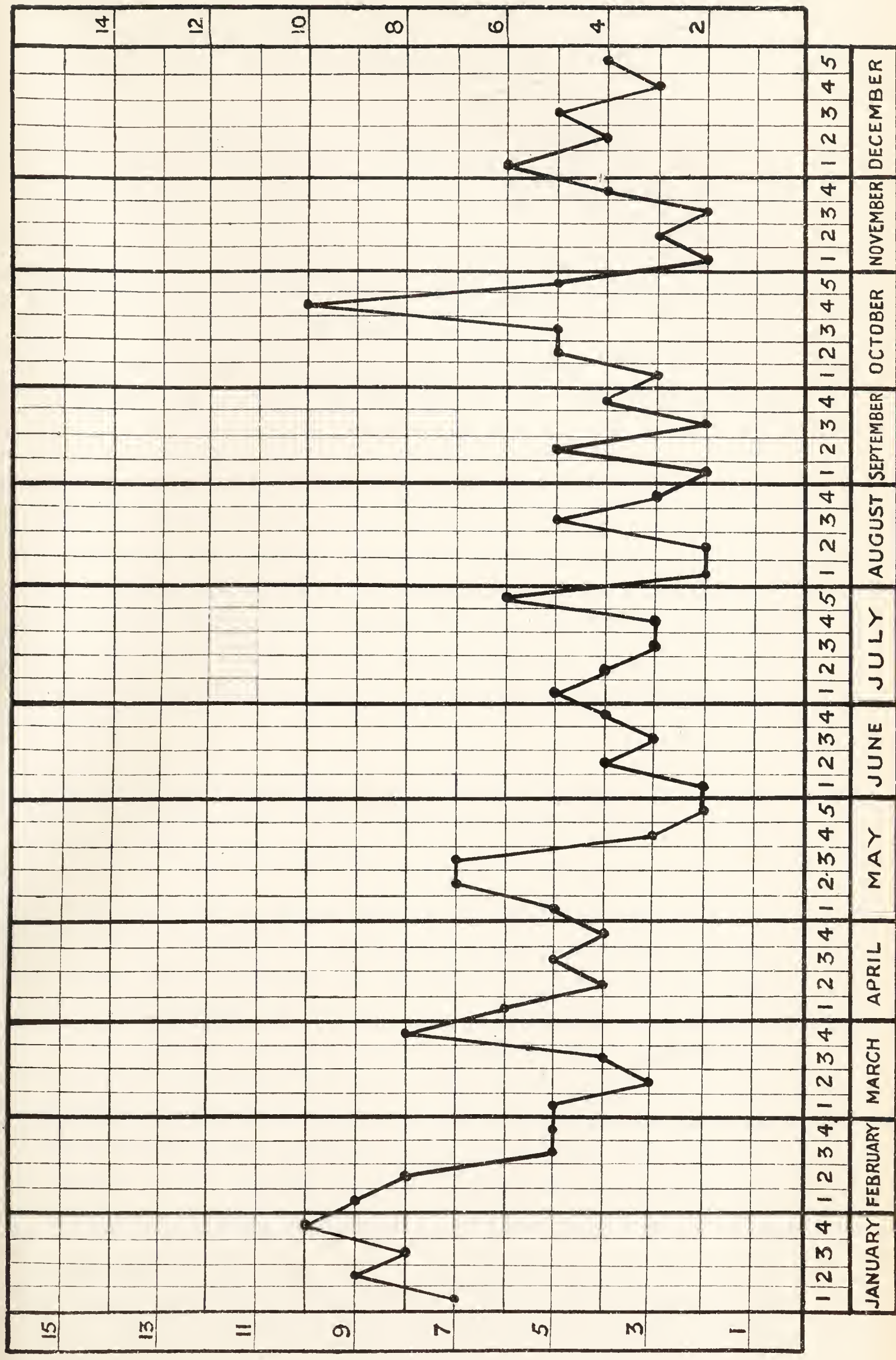
Two-thirds of the mortality was due to Diphtheria.

The Wards were, as usual, kept bright and cheerful of aspect with flowers and plants throughout the year; presents from the friends and relatives of the patients, many of them quite poor people. The "Toy Fund," too, has been kept in tolerably sound condition chiefly by the donations of patients and their friends. The Hospital Committee made a special grant to provide toys at Christmas. The grounds about the Hospital continue to improve in appearance, and the garden is fertile. Some 7000 articles passed through the steam disinfectors.

INFECTIOUS DISEASES.

Scarlet Fever.—472 notifications of Scarlet Fever in 402 dwellings were sent to me during the year. Of these notifications 70 were secondary infections, *i.e.*, second or third cases in the same dwelling. The Chart gives a graphic representation of the prevalence, week by week, of the disease. I regard the occurrence of Scarlet Fever in a proportion over one case to every ten

NOTIFICATIONS OF DIPHTHERIA. 1909.



thousand of the population a week, or, roughly, 12 cases a week, as constituting an "epidemic" condition of the disease.

Of the cases notified to me 44·25 per cent. occurred in males and 55·75 per cent. in females; 23·0 per cent. of the patients were under 5 years of age, 53·0 per cent. between 5 and 10 years of age, 15·0 per cent. between 10 and 15 years of age, 6 per cent. between 15 and 25 years of age, and 3·0 were over 25 years of age (76·0 per cent. of the cases occurred in children under 10 years of age.)

From enquiries conducted specially I found that of the infected dwellings 4·0 per cent. possessed only *one sleeping room*, the average number of the occupants being 4·25 persons; 30·0 per cent. possessed *two sleeping rooms*, the average number of the occupants being 5·25 persons per room; 54·0 per cent. possessed *three bedrooms*, the average number of the occupants being 2 persons per room; and 12 per cent. possessed *four or more bedrooms*, the average number of occupants being 1·25 persons per room.

As regards the disposal of excrement, 9·0 per cent. of the infected dwellings used "bins," 10·0 per cent, "pail" closets, and 81·0 per cent. water-closets.

I was not able to trace Scarlet Fever to any special milk supply, and am disposed to think that a great majority of the cases owed their infection to personal contact. As to the origin of this disease, we are in greater doubt than is the case with other zymotic ailments, and so long as this uncertainty continues our operations for preventing those conditions from arising which favour its development will be *pari-passu* imperfect, and our practical work confined rather to dealing with effects than causes. I am inclined to think that *all the excretions of an affected person are infectious for a time, as well as the breath.*

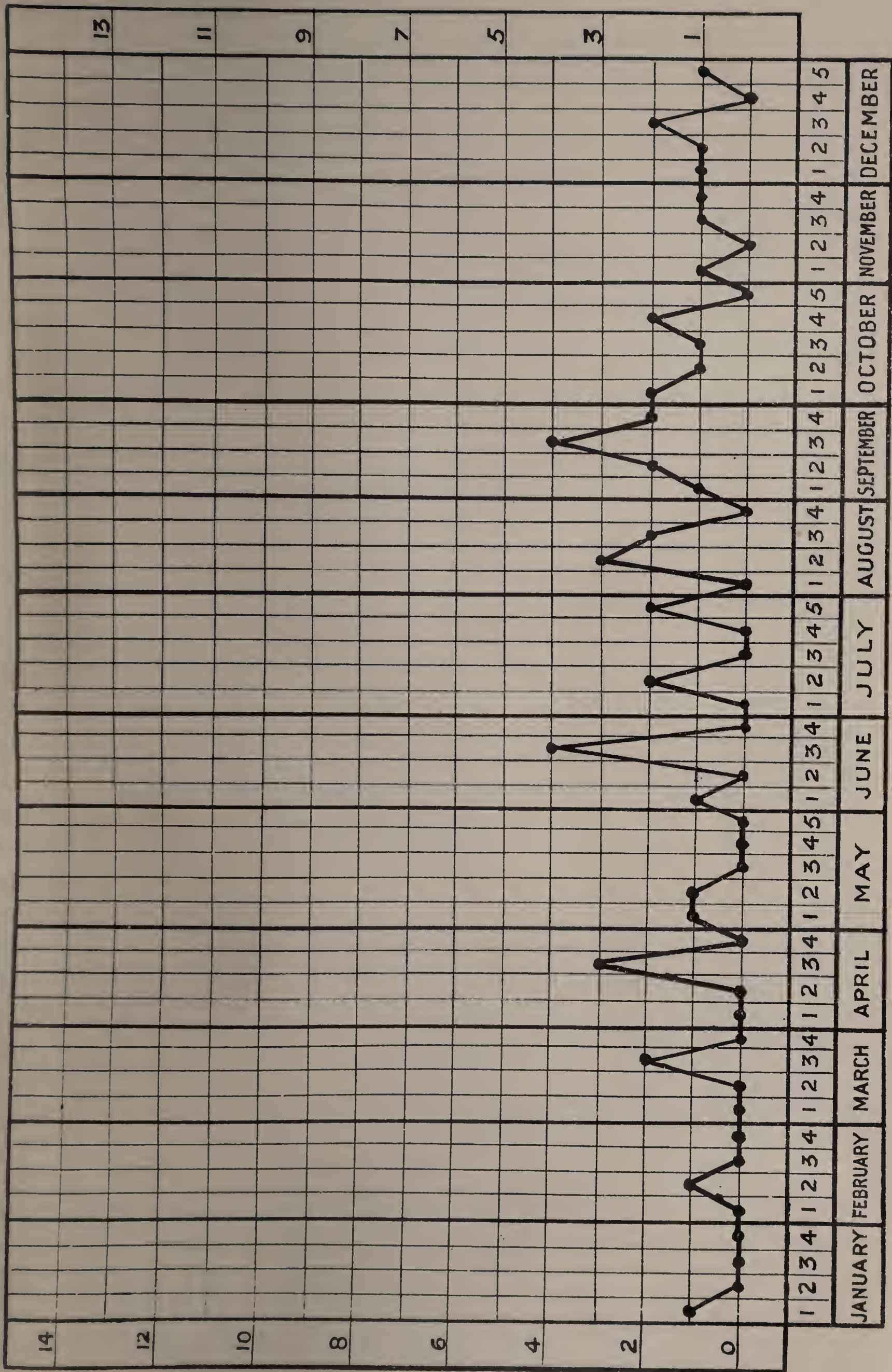
Diphtheria.—271 notifications were sent in during the year, and deducting cases which proved on bacteriological examination

not to be true Diphtheria, there were 252 victims to this disease. There were 18 deaths recorded during the year, 2 of the fatal endings occurred in the Norfolk and Norwich Hospital, and 11 in the Isolation Hospital. The special death-rate being 1 in 14 persons attacked. In 1908 it was 1 in 12.

The cases notified to me occurred in 253 dwellings—there being 18 *instances of secondary infection*, that is, more than one case occurring in the same dwelling, or 1 to every 14 primary cases. Of the persons attacked, 46·0 per cent. were males and 44·0 per cent. females.

21·0 per cent. of the patients were under 5 years of age, 40·0 per cent. between 5 and 10 years, 23·0 per cent. between 10 and 15 years, 11·0 per cent. between 15 and 25 years, 5·0 per cent. over 25 years of age (61·0 per cent. *were in persons under 10 years of age*).

Systematic enquiries into the home surroundings of the patients entitle me to state that 3·0 per cent. of the infected dwellings possessed *only one sleeping room*, the number of the occupants averaging 4; 24·0 per cent. of the houses possessed *two sleeping rooms*, the average number of the occupants (of each room) being 2·75; 59·0 per cent. of the houses had *three bedrooms*, the average number of occupants being 2·5; and 13·0 per cent. of the dwellings possessed *four or more bedrooms*, with an average population of 1·25 persons per bedroom. 11·0 per cent. of the affected households made use of “*bins*,” 16·5 used pail-closets, and 73·5 per cent. *water-closets*. In 7·0 per cent. of the houses there was evidence of *dampness* of the walls or flooring, and due commonly to the *absence of a “damp course”* in the former, and of a layer of concrete below the latter. I caused special enquiries to be made concerning the character of the paving, etc., of the yards adjacent to the infected dwellings, and found that 64·0 per cent. had yards covered with some *material*



impervious to fluids; that 14·0 per cent. had yards partly paved, 5·0 per cent. cobbled yards, and 17·0 per cent. yards *without any paving at all*. In other words, 36·0 per cent. of the houses *adjoined yards offering greater or lesser facilities for the soakage of fluid into the soil about them*. 15·0 per cent. of the houses possessed no sinks, which means that *all household "slops," etc., and other waste fluids would be pitched into and about the gutter in the yard*.

The Chart exhibits the variation in the prevalence of Diphtheria week by week throughout the year. I retain my belief that any condition of the atmosphere or of the surroundings which tends to produce a congested condition of the tissues lining the throat—such as damp, foggy weather, particularly when associated with low barometric pressure, which leads to engorgement and relative congestion of the superficial vessels; or any irritating influence such as the noxious effluvia constantly given off by the contents of "bins," "pail-closets," sewer air, fish and other refuse, etc.—distinctly favours the development of Diphtheria.

Enteric (Typhoid) Fever.—47 cases of Enteric Fever occurred during the year, 5 of them being secondary infections. As the relative prevalence of this disease has been commonly accepted criterion of the sanitary condition of a district, its associations and surroundings become of special interest; and the importance of the subject justifies a more detailed account than is requisite in dealing with other diseases; the more particularly as Enteric Fever has been rather *endemic* than epidemic in its character with us. The association of shell-fish with this disease is noticed in the preface.

The following table gives the notifications of Enteric Fever in each year from 1880 to 1909 inclusive, and the mortality from the disease. There were 5 deaths registered in 1909, 2 of them in Public Institutions.

180	{ notifications of Enteric F. in }	1880 with 37	{ deaths representing a mortality rate of }	20·5 %
50	„	1881 „ 15	„ „	30·0 „
47	„	1882 „ 8	„ „	17·4 „
34	„	1883 „ 11	„ „	32·3 „
121	„	1884 „ 30	„ „	24·8 „
584	„	1885 „ 92	„ „	15·5 „
262	„	1886 „ 39	„ „	14·5 „
136	„	1887 „ 20	„ „	14·7 „
171	„	1888 „ 19	„ „	11·1 „
166	„	1889 „ 22	„ „	13·2 „
176	„	1890 „ 31	„ „	7·6 „
163	„	1891 „ 21	„ „	12·8 „
106	„	1892 „ 19	„ „	17·9 „
314	„	1893 „ 36	„ „	11·4 „
150	„	1894 „ 22	„ „	14·6 „
226	„	1895 „ 24	„ „	10·6 „
196	„	1896 „ 20	„ „	10·2 „
234	„	1897 „ 33	„ „	14·0 „
259	„	1898 „ 48	„ „	18·5 „
144	„	1899 „ 20	„ „	14·0 „
193	„	1900 „ 12	„ „	7·4 „
127	„	1901 „ 15	„ „	11·8 „
57	„	1902 „ 5	„ „	8·7 „
92	„	1903 „ 5	„ „	5·4 „
111	„	1904 „ 15	„ „	13·5 „
53	„	1905 „ 9	„ „	17·0 „
89	„	1906 „ 11	„ „	12·3 „
87	„	1907 „ 14	„ „	16·0 „
216	„	1908 „ 36	„ „	16·6 „
45	„	1909 „ 5	„ „	11·0 „

It will be noticed that the death-rate in 1880 from this disease averaged 20·5 per cent. of the cases notified, or, roughly, 1 case in every 5, and that last year the death-rate was 1 case in every 9. As I pointed out in previous reports, it does not follow necessarily that these figures represent the true state of the facts; that there has been, on the whole, a diminution in the case of mortality cannot be doubted—but it must be remembered that most probably a number of the milder cases of the disease were not recognised and notified in 1880. Increasing skill in diagnosing the disease in its lighter form has, in my judgment, led to a more accurate correspondence between the number of notifications sent in and the actual amount of the disease; although I still think that a

number of cases of Enteric Fever of what is known as the "Ambulatory" type escape notification, and never receive medical treatment. So that here, as elsewhere, the notifications furnish a reliable guide to the relative prevalence of the disease, but must not be regarded as representing accurately the full amount. By "Ambulatory" Typhoid is meant so mild an attack that the patient keeps walking about, pursuing his or her ordinary vocation in life, never ill enough to need a doctor, having some feeling of malaise and what is thought to be some transient diarrhœa.

Differentiating some characteristics of the cases notified in 1909, and comparing them with those notified in 1908, 1907, 1906, I find that as regards

- (a) Sex. 51·0 per cent. of the cases occurred in males and 49·0 per cent. in females; the average percentages of the preceding three years were 48·9 males and 51·1 per cent. females. Females are commonly more home-keeping in their habits than the males, on the other hand, the latter expose themselves to more extended means of infection, especially as casual purchasers of shell-fish from stalls, etc.

- (b) Age.

				Average percentage of the preceding three years.
4·25	{ per cent. of the patients were under 5 years of age }			5·0
21·27	„	„	between 5 and 10	12·3
17·21	„	„	„ 10 „ 15	15·8
12·76	„	„	„ 15 „ 20	15·5
8·51	„	„	„ 20 „ 25	16·7
12·76	„	„	„ 25 „ 35	18·2
19·14	„	„	„ 35 „ 45	9·7
4·5	„	„	over 45	6·6

It will be noticed that 33·0 per cent. of the cases occurred in children under 15 years of age, and that the average number of such cases in the preceding three years was 37·1 per cent. of the total number.

(c) Crowding.

	(per cent. of the affected dwellings had)				Average number of occupants per bedroom
11·0	(only 1 bedroom)				2·5 persons
23·0	„	„	„	2 „	2·0 „
47·0	„	„	„	3 „	2·5 „
19·0	„	„	„	4 or more	1·5 „

The average corresponding percentage of the preceding three years were—1 bedroom, 4·5 per cent.; 2 bedrooms, 27·0 per cent.; 3 bedrooms, 53·0 per cent.; 4 or more bedrooms, 15·5 per cent.; the relative crowding being 3·75, 2·25, 1·75, and 1·25 persons *per room*. In estimating the influence of “man-crowding,” I have only concerned myself about the number of sleeping-rooms, the rooms in which crowding becomes important. The census returns are helpful here only in respect of tenements consisting of one room, which room must, of necessity, be used for bed and living-room; and when it is remembered how large a proportion of these are occupied by one old man or woman living alone, the incidence of the disease in houses containing one bedroom probably is much heavier than the figures represent.

(d) Water supply.

95·75 per cent. of the affected dwellings were supplied with the Company's water.

4·25 per cent. of the affected dwellings were supplied from wells.

Of the preceding three years the (averaged) corresponding proportions were 97·1 and 3·0 per cent.

The proportions in which houses are supplied with “pipe” or with well water are altering quietly but *continuously*; each year sees an increase in the number of houses supplied by the Company, and a decrease in the number of those drawing water from wells.

I believe that at the present time over 98·0 per cent. of the houses are supplied by the Company with water. 6 wells were closed during the year, the water drawn from them being shown, by chemical analysis alone, to be unfit for drinking purposes. The recurrence of Typhoid makes it necessary for us to take every possible precaution with regard to water. The Water Company expends great care upon the filtration and storage of the water it supplies to the citizens, and has it chemically and bacteriologically examined at regular intervals, and short of the demonstration by bacteriological experts of the specific bacillus of Enteric Fever being distributed by the Company with the water it abstracts from the Wensum, I see no sufficient reason for dissenting from the opinion expressed by the Official Analysts that it is "a perfectly safe water for dietetic use."

(e) Milk supply.

Corresponding (averaged)
proportions in the pre-
ceding three years.

9·0 per cent. of the patients drank no milk	7·5
15·0 per cent. of the patients drank it in the raw, uncooked condition	12·5
72·0 per cent. of the patients drank it only, when first boiled or cooked in puddings or in hot tea, etc.	74·2
4·0 per cent. of the patients used condensed milk	5·8

Milk, I think, had, as in preceding years, little to do with propagating Enteric Fever amongst us; its influence, anyway, must have been limited, for practically it is likely only to be a direct source of infection in 9·0 per cent. of the cases among the drinkers of the *uncooked* article. At the same time I am bound to say that, but for the fairly general cooking of the milk consumed among us, we are practically at the mercy of the surrounding districts; so large a portion of our supply comes from outside the City. The appointment of a Medical Officer of Health for the

County of Norfolk will aid us materially in promoting concerted action between the City and the County Sanitary Authorities in the matter of milk supplies.

(f) Shell-fish. The marked association of this article of diet with Enteric Fever in 1908 makes it interesting to record that in 1909 40 per cent. of the cases admitted having consumed shell-fish prior to the attack.

(g) Disposal of excrement.

5.5 per cent. of the affected dwellings used "bins."				
11.5	"	"	"	pail closets.
83.0	"	"	"	water closets.

In the preceding three years the corresponding (averaged) percentages were 19.7 per cent. "bins"; 22.3 pail closets; 58.0 water closets. The change to to the water carriage system progresses steadily. Last year over 1100 water closets were substituted for other types of closet. At the present time I estimate the number of houses provided with water closets at 70.0 per cent. of the total number.

(h) Household drainage.

At 83.0 per cent. of the affected houses the Inspectors reported the drainage as "good." In the preceding three years the corresponding (averaged) percentage was 74.0 per cent.

Which means that in the others, some defect in the drainage such as no sink (which again means that all slop and other waste water would be pitched about the yard), sink waste-pipe not disconnected, or loose and defective "traps," etc., existed.

(i) Character of yard	Average of the preceding three years.
None of the affected dwellings had no yard	0.4
72.3 per cent. of the dwellings had paved yards... ..	60.0
19.2 per cent. of the dwellings had <i>unpaved yards</i>	19.5
6.3 per cent. of the dwellings had <i>partly paved yards</i>	8.5
2.2 per cent. of the dwellings had <i>cobbled yards</i>	10.6

In other words, 28.0 per cent. of the dwellings had yards more or less liable to have the *subsoil soddened with moisture and impurities*. I have drawn attention repeatedly to the importance of having the soil which adjoins a dwelling covered with some material *impervious to fluids*, else it cannot be kept dry. A number of the poorer dwellings in this City have no properly constructed "damp course" in the walls, and, in addition, have not had a thick layer of concrete laid under the bottom floors; in such cases moistening of the subsoil must lead to dampness in the dwelling, to say nothing of the deleterious ground air which will be forced upwards by the rising of the ground-water from time to time; and always be more or less sucked into the dwelling, owing to its atmosphere being warmer.

- (j) Food store. 23.4 per cent. of the affected dwellings had food stored *in a ventilated receptacle*; and 4.27 per cent. of the dwellings had *the household food stored in an unventilated receptacle* (i.e., having no communication with the external air) in some part of the house, other than the living-room; and in as many as 70.21 per cent. of the dwellings the food was stored in *some unventilated receptacle in the actual living-room*; and 2.12 stored it in a ventilated receptacle in the living-room. In the preceding three years the food store was some unventilated receptacle *in the*

actual living-room in 84·0 per cent. of the affected dwellings.

It is worthy of notice that in 72·0 per cent. of the affected dwellings the food was stored in the living-room, and therefore in *an atmosphere more or less stale and impure*. Without assuming a direct connection between such food and a disease like Typhoid, it will be obvious that articles of food, such as milk, butter, bread, etc., kept in such surroundings become contaminated easily with impurities.

(k) Nearness to sewer gratings and gullies.

	Average of three preceding years.		
44·5 per cent. of the affected dwellings were within 20 ft.	20·3
8·5 per cent. of the affected dwellings were within 40 ft.	27·5

The remainder were over 40 ft. These measurements were taken because a stench from a grating or gully has been charged with occasioning Typhoid so constantly by people living near; my own belief is *that pollution of the neighbouring atmosphere with sewer air lowers the resisting powers of the body*, and thus causes those exposed to so deleterious an influence to fall more easily a victim to disease; emanations from collections of excrement in "bins" and pail-closets, and from heaps of decaying refuse, act in the like manner as powerful predisposers to disease.

(l) Occupations of house-holders, &c.

Attendant, 1; Blacksmith, 1; Clerks, 3; Carver, 1; Carter, 1; Carpenter, 1; Compositor, 1; Cowman, 1; Corn-Merchant, 1; Doctor, 1; Engine Drivers, 3; Engine Fitter, 1; Engineers, 2; Fireman, 1; Furniture Remover, 1; Gardener, 1; Hawker, 1; Labourers, 7; Labourers' Wives, 2; Plumbers, 2; Printer, 1; Publicans, 2; Sanitary Inspector, 1; Servants, 2; Schoolmaster, 1; Shoemaker, 1; Tailor, 1; Upholsterer, 1; Warehouseman, 1; Wirer, worker in flour mill, 1.

(iii) Secondary cases.

In 5 dwellings more than one member of the household contracted the disease.

Puerperal Fever.—Four notifications of this dangerous child-bed fever were sent in during the year; there was one fatal case. Supposing the notifications to represent all the cases which occurred, the death-rate, 25·0 per cent. was a low one, the average death-rate for the preceding three years having been 55·0 per cent. of the notified cases. Puerperal Fever being a preventible disease, we were entitled to look for a diminution in the mortality from it. I forbid the nurse or midwife in attendance to go to another confinement for a period, and then only after a thorough cleansing and disinfection of her clothing and person, and, as far as possible, dwelling. The Medical Practitioners in the City I have found anxious to adopt all reasonable precautions, the chief being a temporary abstention from obstetric practice. Rigorous antiseptic precautions in obstetric practice furnish the best means of preventing the development of the disease, and as our midwives have now to be registered and are trained more scientifically, we may look justifiably for a steady lessening of Puerperal Fever; more particularly as parturient women themselves come to understand the vital importance of scrupulous cleanliness being observed by themselves, their attendants, and in all the surroundings. The Midwives' Act should enable us to maintain a more vigorous control over this disease, particularly after 1910, when certain of its provisions come into force.

Erysipelas.—Forty-five cases were notified to me. Five deaths were registered from it. In 1908 the figures were 61 and 12 respectively. Erysipelas of a fatal type cannot be regarded as having been prevalent in the City.

Measles.—Measles was not notified during the year, but no less than 81 deaths were attributed to it. This dangerous disease, particularly on account of its liability to set up lung complications; and, on account of its lengthy incubative period and infectivity, is a

source of administrative trouble to all concerned with the control and management of schools, especially infant schools. Notification would aid us to bring about an alteration in the attitude of mind assumed by many of the mothers of families in Norwich towards this highly dangerous infective disease, and the criminality of carelessness in dealing with it. In 1908 one, and 1907, three deaths were registered as being due to this disease.

Whooping Cough proved fatal to 20 children last year. This is a result for 1909 which is more satisfactory than that for the preceding year, when 29 deaths from the disease were registered. This disease is highly infectious, and dangerous too. I gain information of its prevalence among children attending the schools only by indirect methods, and of its fatality from the death certificates.

Diarrhœal Diseases carried off 54 persons, 44 of whom were *under 1 year of age*, the greater number succumbing (as is customary) in the third quarter of the year. In 1908 there were 49 deaths from these diseases. I attribute the prevalence of and mortality from these diseases to *bad feeding, and particularly to carelessness in the treatment and storage of milk and other food, to flies, and to soil and air pollution, due to the retention of filth upon the premises.*

Influenza.—11 deaths were certified to be either directly or indirectly due to this disease; in 1908 the number of deaths ascribed to it was 24.

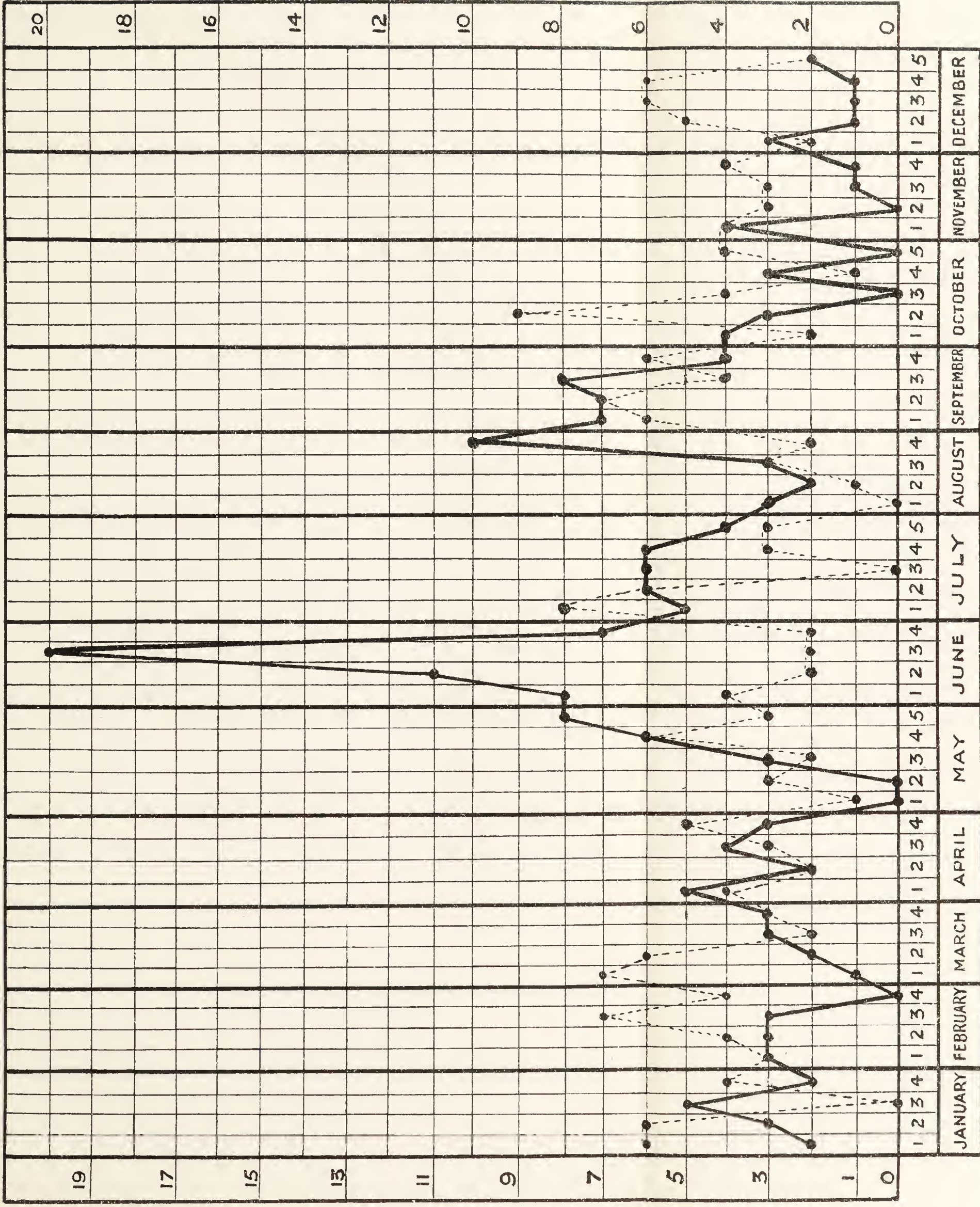
Cancer.—124 deaths were attributed to malignant growths during the year; in 1908 the number was 149; in 1907 it was 157.

Septic Diseases (other than those specified) caused the deaths of 45 persons; in 1908, 40; in 1907, 48.

DEATHS FROM ZYMOTIC DISEASES BLACK LINE: _____

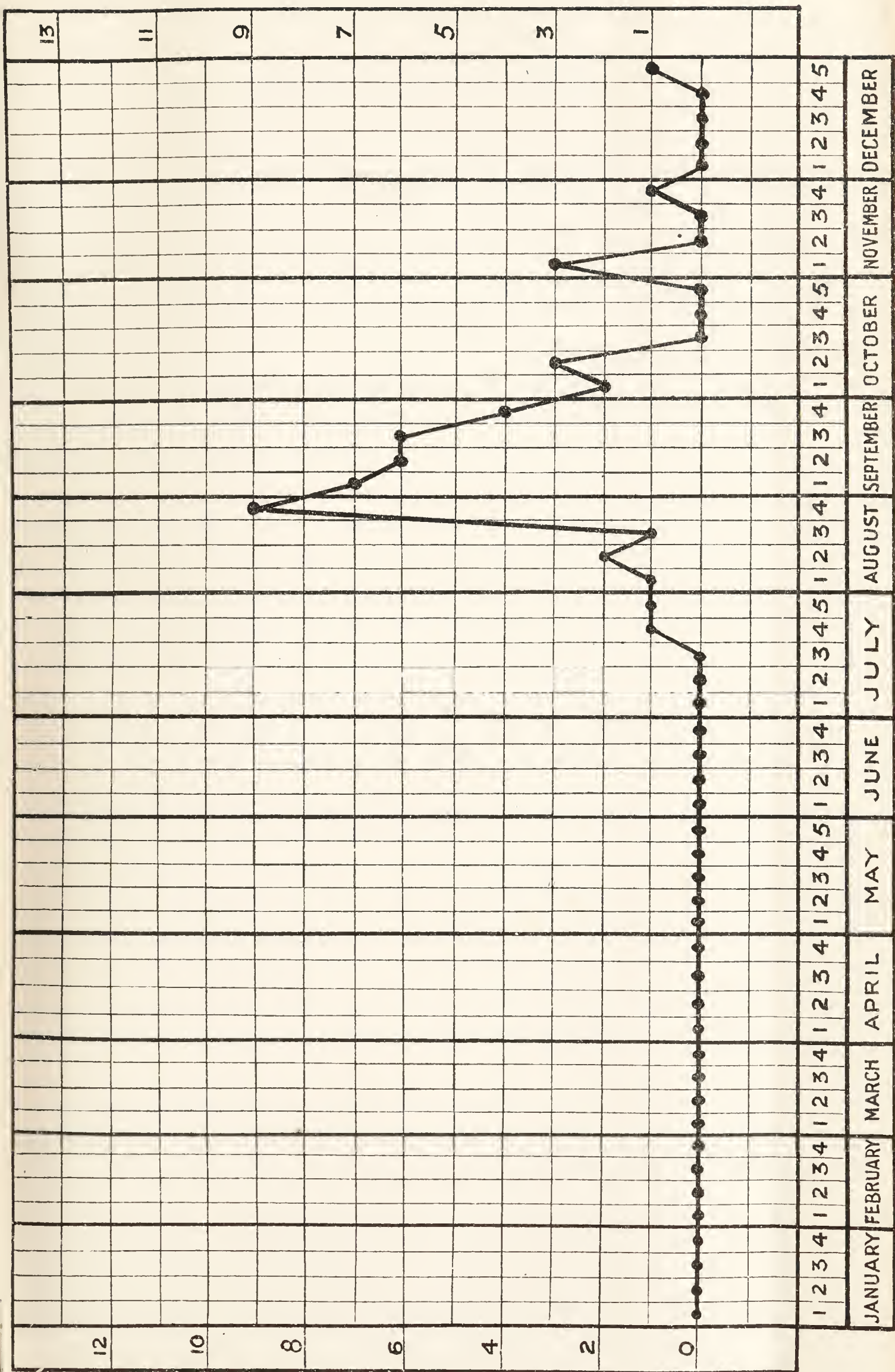
DEATHS FROM TUBERCULOUS DISEASES BLACK DASHES: 1909.

1909.



Total Tenements and Tenements of less than Five Rooms, distinguishing those Occupied by Various Numbers
of Persons in the County Borough and City of Norwich and its Constituent Wards, 1901.

WARDS.	Total Tenements.	No. of Rooms in each Tenement.	NUMBER OF OCCUPANTS IN EACH TENEMENT.												No. of Tenements of less than five Rooms.
			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12. or more.	
NORWICH, CITY OF	25585	1 2 3 4	231 470 197 186	98 490 440 702	12 229 365 713	10 138 245 577	4 101 178 461	4 34 123 406	... 17 97 251	... 4 35 144	... ... 30 90	... 1 9 33	... 1 4 12	... ... 1 7	359 1485 1724 3582
No. 1 or CONESFORD	1298	1 2 3 4	16 37 18 4	12 26 34 23	1 15 33 22	1 8 18 14	1 1 14 12	1 1 13 16	... 3 9 7	... ... 4 7	... ... 2 3	... ... 1 ...	... ... 1 ...	... ... ... ...	32 91 147 108
No. 2 or BER STREET	1868	1 2 3 4	12 54 21 24	8 53 31 84	1 15 46 82	1 17 19 66	... 21 22 56	... 9 11 53	... 1 14 39	... ... 5 11	... ... 5 16	... ... 1 5	... ... ... 5	... ... ... 1	22 170 175 442
No. 3 or MANCROFT	842	1 2 3 4	7 38 19 11	2 28 31 17	... 5 21 21	... 1 15 16	... 2 10 9	... ... 3 6	... ... 7 8	... ... 1 4	... ... 3 1	... ... ... 1	... ... ... ...	... ... ... ...	9 74 110 195
No. 4 or WESTWICK	1406	1 2 3 4	50 51 17 19	12 50 38 64	1 20 29 52	1 13 17 34	... 10 14 33	2 1 12 27	... ... 10 11	... ... 6 15	... ... 1 4	... ... 1 1	... ... ... ...	... ... ... ...	66 145 145 260
No. 5 or COSLANY	1561	1 2 3 4	52 50 32 10	34 68 73 70	4 44 52 56	3 28 45 56	2 20 35 52	... 5 22 32	... 5 16 29	... ... 5 17	... ... 9 13	... ... 3 5	... 1 1 2	... ... 1 ...	95 221 294 342
No. 6 or FYE BRIDGE	1798	1 2 3 4	42 85 19 11	10 114 57 45	1 53 65 48	1 33 51 58	... 23 31 40	... 8 21 39	... 4 17 28	... 2 10 14	... ... 4 8	... ... 1 4	... ... 1 ...	... ... ... 1	54 322 277 296
No. 7 or THORPE	1408	1 2 3 4	3 20 5 5	1 8 13 25	1 14 7 18	... ... 6 30	... 2 8 21	... 1 5 15	... ... 3 7	... ... ... 7	... ... ... 2	... ... ... 1	... ... ... 2	... ... ... ...	5 45 47 134
No. 8 or LAKENHAM	1344	1 2 3 4	3 16 11 25	... 16 20 83	... 2 18 102	... 5 15 88	... 1 9 56	... ... 5 48	... ... 3 30	... ... ... 19	... ... ... 12	... ... ... 3	... ... ... ...	... ... ... ...	3 40 82 466
No. 9 or TOWN CLOSE	1459	1 2 3 4	3 20 9 18	... 23 33 73	... 14 19 87	... 4 5 62	... 2 2 56	... ... 4 49	... ... 2 24	... ... 1 8	... ... ... 4	... ... ... 3	... ... 1 1	... ... ... ...	3 63 75 386
No. 10 or EATON	2469	1 2 3 4	2 12 ... 1	... 5 3 9	... ... 1 18	... 1 6 9	... ... ... 5	... ... ... 6	... ... ... 2	... ... ... 4	... ... ... ...	... ... ... 1	... ... ... ...	... ... ... ...	2 18 10 55
No. 11 or NELSON	1496	1 2 3 4	2 18 12 23	2 11 22 79	... 3 15 60	... 2 3 51	... 1 3 29	... 1 ... 22	... ... 1 20	... ... ... 8	... ... 1 5	... ... ... 1	... ... ... ...	... ... ... ...	4 36 59 298
No. 12 or EARLHAM	1384	1 2 3 4	2 3 5 6	... 2 5 17	... 1 2 20	... ... 1 15	... ... 1 7	... ... 2 3	... ... ... 1	... ... ... 2	... ... ... ...	... ... ... 2	... ... ... ...	... ... ... ...	2 7 16 71
No. 13 or HEIGHAM	1472	1 2 3 4	5 7 2 3	... 7 2 21	... 3 2 15	... 1 ... 3	... 2 5 8	... ... ... 7	... ... ... 2	... ... ... 1	... ... 1 3	... ... ... 2	... ... ... ...	... ... ... ...	5 20 7 65
No. 14 or WENSUM	1568	1 2 3 4	11 24 10 15	... 32 23 38	... 14 13 46	... 9 21 31	... 6 4 35	1 2 4 32	... ... 5 13	... ... 2 12	... ... 1 9	... ... ... 4	... ... ... 1	... ... ... ...	12 87 89 237
No. 15 or CATTON	2195	1 2 3 4	8 13 13 10	4 21 36 44	1 7 30 51	... 4 13 29	... 1 17 32	... 1 8 41	... ... 6 19	... 2 ... 10	... ... 1 6	... ... 2 1	... ... 1 1	... ... ... ...	13 49 127 245
No. 16 or MOUSEHOLD	2017	1 2 3 4	13 22 4 1	13 26 19 10	2 19 12 15	3 12 9 15	1 8 6 10	... 5 7 10	... 4 ... 11	... ... 1 5	... ... 2 4	... 1 ... 1	... ... ... ...	... ... ... ...	32 97 64 82



THE TUBERCULOUS DISEASES.

(Forms of the disease called commonly "Consumption.") 131 deaths were certified to be due to tuberculous disease of the Lungs (Phthisis) and 70 to other forms of tuberculous infection; making in all a total of 201 *deaths from the tuberculous diseases*. This is below the average for the preceding sixteen years, which average amounts to 228 *deaths from the tuberculous diseases per annum*. Nothing but benefit to the healthiness of our community can result from the general apprehension of the fact that the tuberculous diseases are dangerous—the phthisical type particularly. I feel that I have done well in insisting, as for many years I have done, upon the dangers to the community of these *catchable and largely preventable diseases*. The chart shows the weekly fluctuations in the tuberculous death-rate throughout the year; and it will be worth the reader's while to compare this chart with the charts of the sixteen preceding years. The returns for the sixteen years confirm the fact that the *tubercle bacillus* (the micro-organism of whose pernicious activity these diseases furnish us with reliable information) is no stranger among us. It flourishes practically wherever people are crowded together, and may be said to be entrenched in all old cities. This lethal bacillus, which has cost, and is still costing us, as a nation, directly or indirectly, millions of money, and goes on reaping its untimely harvest of lives year after year, is most at home in dark, ill-ventilated places, and is much favoured by overcrowding in any dwellings. *Sunlight and fresh air, fortunately, are destructive to it*; which fact helps to explain why sanitary experts claim that every dwelling shall have good *air space, and freedom for admission of sunlight into and about it*.

In 1893 I first offered to disinfect gratuitously the rooms, which had been occupied by a tuberculous patient, after the removal by death, or otherwise, of the victim of the *tubercle bacillus*; and there has been a really remarkable growth of opinion on the part of the public that it is *a wise step to have rooms, etc., disinfected after a death has occurred from tuberculous diseases*; and one can only hope that the practice will become general. I hope also that the

members of the medical profession will recommend disinfection to the friends of their patients in all cases of death, or of removal. It is, at any rate, encouraging to find that, within 10 years, the relatives of more than nine-tenths of the fatal lung cases consented to have this precautionary measure adopted *for the protection of the other inmates of the dwellings*.

The *tubercle bacillus* is coughed up constantly in large numbers with the spittle of consumptive people, and this same bacillus is present commonly in the discharges from tuberculous glands, abscesses, &c. Should hæmorrhage occur, the specific bacilli will pretty certainly be carried out with the blood. Hence the importance of either rigidly disinfecting (boiling is a good method) or burning any rags, clothes, &c., soiled with the blood or expectoration. For if the extruded matter be left to dry, it will, in time, become fine dry dust; which dust may be kicked or brushed up into the air, and as it contains the potentially active bacilli, it may be the means of introducing these into the bodies of others; or the expectorator of the infective material may, in this way, infect his own and other's food, and re-infect himself. It is not only a piece of enlightened self-interest on the part of a consumptive to take care that all expectorated matter is disinfected rigidly, or, what is better, burnt promptly, but it is also his imperative duty to minimise the risk to his fellows by so doing. It is *what a consumptive coughs up* that is to be feared: not his mere breath—one may sit, for example, in the same room with him, if it be well ventilated, and his habits are cleanly, without practical risk. Spitting about in public-places and vehicles becomes, when the spitter is a consumptive, in addition to being a disgusting habit, a dangerous one as well; a habit that should be discouraged rigorously, alike in the interests of decent manners and of the general health. A consumptive can always carry a damp rag with him, which rag he can burn easily.

Unfortunately, a very large number of people inherit a predisposition, that is a heightened liability to fall victim to tuberculous disease, and many others favour the development of the disease in

themselves, through lowering their general tone by living amid surroundings of a depressing character, such as *ill-lighted, dusty, and badly-ventilated* shops, work-rooms, houses, and offices. A person enjoying fairly good health may, and probably does, take in tubercle bacilli from time to time with his food and air; but commonly the resisting power of his tissues is able successfully to cope with the invaders; the person, however, whose health is below par, and whose tissue-resistance is enfeebled, such an one all too frequently succumbs—and the onset is so insidious that the bacilli may gain a firm hold before the mischief is noted. The great general preventatives of consumption are *good food, sunlight, and fresh unbreathed air*. There are grounds for believing that pulmonary tuberculosis is due more often than is supposed to transference of infection from the alimentary tract. When a member of a household have fallen a victim to one or the other of the tuberculous diseases, it is not necessary to treat him as a social leper. If precautions be taken to prevent *anything he coughs up* from ever drying, and if the rooms occupied be ventilated effectively, he may share the ordinary family life. He should, however, sleep in a bed by himself, and, where practicable, *in a separate room*; this room should be as large as possible, and the consumptive should early acquire the habit of *keeping the windows always OPEN*, supposing, as is commonly the case, there is no other means of admitting fresh air. Of course, the proper way of securing adequate ventilation is to make arrangement *altogether unconnected with the window*; perhaps the simplest, and certainly one of the best means of doing this, is to insert a grating at *the floor level* in the external wall, delivering, if possible, *fresh air under the bed* (by means of a simple valve the incoming air can be directed upwards to the bottom of the bed); the atmosphere of the room will then always keep refreshing and healthsome, whether the window be closed or not. If such fresh air grating be *not* provided (the expense of inserting one is trifling), then if the window-frame reach low down, say to within 18 ins. of the floor, let it be kept open *at the bottom*; if the lower edge of the window be, as it most stupidly usually is, about 4 ft. from the floor, place an accurately fitting piece of board

under the lower sash, so as to leave a vertical aperture between the sashes of not less than 3 ins. in depth. Failing all these, open the window *at the top*. In towns the air may be rendered more acceptable to the irritated lung tissues by causing it to pass through a screen of stretched flannel, which will filter out effectually from the air particles of dust, "blacks," &c. *Under no circumstances is it prudent to turn the room into a practically closed box.* Let the bed clothing be warm and light, *e.g., ventilated* eiderdown quilts. With good air, cold never need be feared. I do not believe that moisture is detrimental to a consumptive, but I believe that the lowered barometric pressure which usually accompanies it is, by leading to the engorgement and relative congestion of the superficial vessels. The important point is to keep a consumptive irrigated constantly *with unbreathed air*. It is when the bacillus-riddled victim of tuberculous disease becomes too weak to attend to himself carefully that the great risk of infecting his bedding, &c., and room occurs, and hence the sensibleness of having these carefully disinfected, after pale death have entered with equal foot, whether it be into the hovels of the lowly or the halls of the great.

Tuberculous disease may be conveyed to the human by other animals, notably, by cattle. Dairy cows, in particular, if kept in over-crowded and badly ventilated sheds, fall ready victims to tuberculous disease, and, *through their milk*, may convey it to milk-feeding people, *particularly children*. This danger, in a great measure, may be guarded against by, *in all cases, boiling or otherwise thoroughly cooking suspected milk* before consuming it. There is a lessened but still sensible risk in eating the flesh of tuberculous cattle, for the risk cannot be entirely banished by cooking, the interior portion of joints, etc., rarely reaching a temperature sufficiently high to kill the bacilli.

It should be the duty of specially-appointed veterinary surgeons *to make periodical inspections of all dairy cattle—to*

order their destruction when desirable (fair compensation to be given in all cases where the owner has taken reasonable care to give no encouragement to the disease) ,and to supervize the disinfecting of the stalls, sheds, etc., which have been occupied by the affected animals. But one fears that these simple precautions will only be adopted when the electors of this Realm of England have realized "that public health *is* public wealth," and make the promotion of national healthiness "the supreme law."



REPORT

OF THE

CHIEF SANITARY INSPECTOR.

Health Department,

Municipal Buildings,

Norwich, 1910.

TO THE MEDICAL OFFICER OF HEALTH.

Dear Sir,

The following is a synopsis of the principal work carried out during the year ending December 31st. 1909.

In order that comparisons and references may be easily made, I have so far as possible followed up the form of report adopted during the past years.

5,404 Nuisances detected.

731 Notices served by order of the Health Committee.

1,347 Preliminary Notices served.

19,506 Premises re-inspected.

2,231 Nuisances have been abated.

339 Special complaints have been received and the premises inspected.

817 Letters sent in order to obtain the abatement of nuisances, &c.

130 References to the City Engineer.

165 References to the Water Works Company.

The following are the principal matters that have been dealt with :—

1,458	Orders served to provide efficient closets.
585	„ „ repair defectively paved yards.
282	„ „ repair or disconnect rain water pipes.
354	„ „ cleanse and unstop yard drains.
387	„ „ provide efficient privy pans and dust receptacles.
242	„ „ efficiently trap yard drains with gullies.
134	„ „ repair defective water closets.
97	„ „ cleanse dirty houses.
87	„ „ remove and cease to keep animals.
66	„ „ repair defective house roofs, floors, &c.
57	„ „ remove foul accumulations.
16	„ „ abate overcrowding.
45	„ „ repair defective eaves gutters.
51	„ „ repair or disconnect sink waste pipes.
61	„ „ empty and cleanse foul cesspools.
12	„ „ provide premises with a proper supply of water.

PRIVY CONVERSIONS.

Private owners continue to convert privies into water closets without notice from the Corporation. During the past year 158 privies have been so converted.

INFECTIOUS DISEASES.

1,066 visits have been paid to infected premises.

1,227 rooms have been disinfected upon the removal or recovery of the patient.

Liquid and powder carbolic disinfectants have, as in former years, been given to the householders gratuitously in all cases of infectious disease, and for disinfecting purposes generally.

HOUSE TO HOUSE INSPECTION.

136 houses and premises have been visited.

YARD AND COURT INSPECTION.

5,708 visits have been paid to Yards and Courts.

The privies and yards found dirty were cleansed at the request of the Inspectors. Other sanitary defects found are dealt with under the term "Nuisances," in a preceding column.

SLAUGHTER-HOUSES.

Number of Registered and Licensed Slaughter-Houses, 40.
2,098 visits have been paid to slaughter-houses.

It was found necessary to caution several occupiers of slaughter-houses respecting the dirty condition of the walls and floors, and the non-removal of refuse in accordance with the Slaughter-House Bye-Laws.

MARKETS.

The Fishmarket has been visited and inspected daily, and the Vegetable, Fruit, and Provision Markets on Market Days.

The Inspectors on duty every Saturday evening for the purpose of inspecting the meat, poultry, fish, &c., exposed for sale in the Provision Market, and for examining articles of food exposed for sale in the poorer parts of the City, have on several occasions found it necessary to deal with various articles of food which were in a condition unfit for the food of man, and such articles have been included in the undermentioned list of unsound food.

UN SOUND FOOD.

The following have been destroyed as being unfit for human food, with the consent of the owners :—

- 9 Carcases of Pork.
- 5 „ Mutton.
- 3 „ Beef.
- 3 Forequarters of Beef.
- 1 Hock of Veal.
- 23 Ox livers.
- 8 Sets of Ox Lungs.
- 5 Ox Tongues.
- 5 Sets of Ox Skirts.
- 2 Sheep's Plucks.
- 2 Crown Fats.
- 1½ Calves' Heads.
- 1 Pig's Pluck.
- 1 Pair of Sweetbreads.
- 1 Spleen.
- 1 Kidney.
- 91 Boxes of Dried Codlings.
- 85 „ „ Haddocks.
- 64 Bags of Shrimps.
- 46 Codfish.
- 32 Boxes of Kippers.
- 27 „ Fillets (Cod).
- 15 Bags of Winkles.
- 15 Boxes of Filleted Haddock.
- 10 „ Roes.
- 8 „ Coalfish.
- 7 „ Crabs.
- 5 Bags of Cockles.
- 4 Salmon.
- 3 Boxes of Haddocks and Coalfish.
- 2 „ Dabs.
- 2 „ Plaice.
- 2 Barrels of White Sprats.

- 1 Box of Whiting.
- 1 Kit of Crayfish.
- 1 Box of Coalfish and Cod.
- 1 Tub of Codfish.
- 29 Tins of Condensed Milk.
- 4 cwt. Plums.
- 1 Bag of Onions.

PROCEEDINGS UNDER THE SALE OF FOOD AND DRUGS ACTS.

During the year 218 samples of food and drugs have been submitted for analysis.

Description of Samples.	Number of Samples.	Result of Analysis.	
		Genuine.	Adulterated.
Milk	175	144	31
Butter	29	28	1
Coffee	5	5	—
Baking Powder	4	4	—
Olive Oil	3	3	—
White Pepper	2	2	—
	218	186	32

Number of samples of Milk taken on Sundays, 53.

In 22 cases proceedings were taken against vendors of adulterated articles:—

21 in cases of adulterated Milk.

1 „ „ „ Butter.

In 18 of the above cases the magistrates convicted and imposed fines varying from 5/- to £5 and 7/- costs.

In one case of Milk and one of Butter the summonses were dismissed, and in two cases of Milk the summonses were withdrawn.

In 10 cases the vendors of Milk were written to and cautioned, and in one case the vendor of Margarine was written to and cautioned for selling Margarine without the necessary label.

Particulars of the prosecutions are given below :—

No.	Date.	Adulteration.	Article.	Fine.
48	1909. Mar. 29th	2.5 per cent. added water	Milk	Withdrawn Defendant paying 3/6 costs
49	" "	10 per cent. added water & 5 " fat deficient	Milk	£5 and 7/- costs
67	April 21st	16½ " added water	"	10/- and 7/- costs
70	" "	3 " "	"	5/-
73	" "	25 " fat deficient	"	20/- and 7/- costs
75	" "	9 " "	"	20/- and 7/- costs
80	" "	26.71 " added water	"	Dismissed
83	" "	12.34 " fat deficient	"	£2 and 7/- costs
108	June 23rd	18.34 " "	"	10/- and 7/- costs
110	" "	11.4 " added water	"	£1 and 6/- costs
116	" "	10.3 " fat deficient	"	10/- and 7/- costs
117	" "	13.3 " "	"	£2 and 6/- costs
122	Aug. 6th	10 " "	"	10/- and 7/- costs
130	" "	9 " "	"	10/- and 7/- costs
143	" "	23 " added water	"	Withdrawn
144	" "	12 " fat deficient	"	10/- and 7/- costs
149	Sept. 6th	95 " foreign fat	Butter	Dismissed
167	Dec. 20th	15 " added water	Milk	30/- and 10/- costs
171	" "	25 " fat deficient	"	10/- and 6/- costs
203	1910. Jan. 24th.	7 " added water	"	10/-
204	" "	11 " fat deficient	"	10/-
221	" 31st	10½ " added water	"	£5 and 7/- costs

The following prosecutions were also taken, viz. :—

Date.	Particulars.	Fine.
1909. September 6th	For selling Margarine without the necessary label	5/- and 7/- costs
April 21st	Milkseller for not having his name and address inscribed on can	2/6
August 6th	For obstructing one of your Inspectors	11/6
September 6th	" " " "	£3 14s. and 6/- costs

WATER ANALYSIS.

16 Samples of Water have been taken from pumps and draw-wells.

7 Samples were certified to be “unfit for drinking purposes,” and injurious to health.

9 Samples were certified “passable.”

In the 7 cases where samples were certified to be “unfit for drinking purposes,” the premises have been provided with the Water Works Company’s Water.

COWSHEDS, DAIRIES, AND MILKSHOPS.

Cowsheds—

Number on Register, 58.

Number of Cows, 531.

Dairies—

Number on Register, 27.

Milkshops—

Number on Register, 207.

Number of applications for registration, 21.

Number of milkshops closed, 13.

While many milkshops are kept scrupulously clean, there are a number where the milk is kept in close proximity to other articles which are liable to contaminate the milk.

It is much to be hoped that the granting of Licenses to unsuitable persons will shortly be forbidden by Regulations.

COMMON LODGING-HOUSES.

The Common Lodging-houses have been visited weekly and were found to be conducted in a fairly satisfactory manner.

HOUSES LET IN LODGINGS.

313 visits have been paid to houses let in lodgings, and many rooms were limewashed at the request of the Inspectors.

CARAVANS.

21 Inspections of Caravans have been made.

MEETINGS OF OWNERS.

458 Meetings of owners have been held.

OFFENSIVE TRADES.

123 Inspections have been made of premises where offensive trades are carried on.

SMOKE OBSERVATIONS.

107 Smoke Observations have been taken.

It has been necessary to caution several manufacturers and firemen, and recommend the use of a better class of coal and the exercise of greater care in firing.

SHOP ASSISTANTS ACT.

134 Inspections have been made to see that the requirements of above Act were carried out.

PIGGERIES.

137 Visits have been paid to Piggeries, many of which have been cleansed at the request of the Inspectors.

BAKEHOUSE INSPECTION.

Number of Bakehouses on Register, 165.

Visits paid to Bakehouses, 276.

MARGARINE ACT.

163 Inspections have been made of premises to see if Margarine was sold, and where such was the case, to see that the requirements of the Margarine Act were carried out.

FACTORIES AND WORKSHOPS.

Total number of Workshops in the City	...	674
Number of New Workshops inspected	...	127
Total number of Factories in the City	...	327
Number of Outworkers' Premises visited by		
Male Inspectors	... ..	727

The undermentioned are the insanitary conditions that have been dealt with at the above class of premises :—

174 Workshops and Workrooms have been cleansed and limewashed.

19 Water Closets have been provided.

2 Urinals have been fitted.

4 Cases of overcrowding have been dealt with.

4 Workshops floors, roofs, &c., have been repaired.

5 Defective water closets have been repaired.

In 5 cases the W.C. accommodation was efficiently screened from the workrooms.

1 Case of insufficient drainage has been dealt with.

4 Cases of insufficient ventilation have been dealt with.

SCAVENGING.

During the year 9,532 Loads of Privy Bin Refuse were removed by the Night Waggon, and 21,607 Loads of House Refuse by the Dust Waggon in the daytime.

8,361 Loads of Refuse were destroyed at the New Mills Depot.

MEMORANDUM.

There are 4,004 Privy Pans and 1,745 Privy Bins in the City, while 22,048 houses are provided with water closet accommodation.

I am, dear Sir,

Yours obediently,

JOSEPH BROOKS,

Chief Sanitary Inspector.

